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MADRAS JOURNAL

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No. 24—*July* 1839.

I.—*Fifth Report of progress made in the Examination of the* MACKENZIE MSS., *with an Abstract Account of the Works examined.—By the Rev.* WILLIAM TAYLOR, *Member of the Madras Literary Society, &c. (Continued from our last No.)*

B.—TELUGU.

a. Palm-leaf manuscripts.

1. *Vâni-vilâsa,* a miscellany, No. 76—Countermark 458.

This is a large, and rather closely written, manuscript, containing a poem on multifarious topics by *Rangha-sayi* of *Tiruvallur.* The literal rendering of the title is " the sport, or pastime, of *Sarasvati* ;" the said *Sarasvati,* as consort of *Brahma,* being regarded as the patroness of poetry, and eloquence. There are seventy-seven chapters in this poem, each on a distinct subject; to abstract which fully seems in no wise requisite ; a brief indication, of the contents of each chapter, will suffice, in order to give a general idea of the work. It is narrated by *Suta-rishi* to *Sonaca-rishi.*

1. Discourse between *Varuna* and *Brighu*, on beneficence, or charitable donations to *Brahmans*.

2. Discourse between *Siva* and *Parvati*, on the duties and deportment of females.

3. The perfections of the deity, discoursed of by *Suta*.

4. Some geographical details, as to the four quarters of the world; the seas; and similar topics.

5. The merit, and usefulness, of the three-lined horizontal *Saiva* mark, on the forehead with *Vib'húti*, or ashes of cow-dung.

6. Concerning the age of *Brahma*.

7. Relates to the formation of mundane eggs, or various rudiments of worlds, or systems of worlds, within the body of *Brahma;* that is the universe.

8. *Bhulóca-pramánam*, or statement concerning the earth, and the seven upper worlds; *Satya-lòca*, or the world of *Brahma*, being the highest.

9. Concerning the celestial sphere, or the region of the stars.

10. The conformation of the human body.

11. Relating to the origin of water, in general; and seas, or rivers, in particular.

12. The legend of *Gaya*. The excellency of the place, and fane, at *Gaya*, and merit of pilgrimage thereto.

13. The legend of *Calinda*, a river at *Gaya*.

14. The legend of the *Godaveri* river, its virtue, or excellency.

15. The legend of *Bhadràchalam*, a hill so called in *Telingana*.

16. The legend of *D'herma-puri*, a town or village.

17. The legend of *Vencatachala*, or *Tripeti*.

18. The legend of *Canchi-puram*, or Conjeveram.

19. The excellency of *Saiva* fanes in general.

20. The merit or power, of the *Pravara-c'handa*, a formulary of prayer concerning family lineage; used at morning, noon, and evening.

21. The superiority of the *Brahmanical* tribe, or caste.

22. The importance, and value, of friendly patronage.

23. Concerning the *Annìcam*, a formulary of evening devotion.

24. The formation of the human species by *Brahma*.

25. The three-fold homage of *Brahma* to the Supreme Being.

26. The splendour, or variously-coloured brilliancy, of the stars.

27. The beneficent art of medicine.

28. The different kinds of presents, or donations, suitable to be made by females, to others of their own sex.

29. Rules, or previous observances, in the proper conduct of war in general.

30. The attributes, marks, qualities, of the ten kinds of *Brahmans*, as the *Niyogis*, *Vaishnavas*, *Vaitugis*, *&c.*

31. Observance of feeding *Brahmans*, on the recurrence of the anniversary of the death of a parent, or other near relative.

32. Rule for the *Brahman* partaking of such food, as to time and quantity; fulness, even to repletion, being allowed.

33. The origin of the *Tulasi* plant, or basil.

34. The merit, or excellency, of the *Tulasi* plant.

35. The merit of maintaining a lamp, in a fane, near an image.

36. The merit of presenting food to the image, in a fane.

37. The merit of presenting a cow, or cows, to a *Brahman*.

38. The merit of giving food to *Brahmans*, or other persons in need.

39. The merit of presenting a female in marriage, to any person, defraying the attendant expenses.

40. The merit of giving water to thirsty travellers, in water-booths, or otherwise.

41. The duty of repaying loans, or clearing off debts, and the crime of not doing so.

42. The merit of fasting on the *Yécádasi*, or eleventh day of the moon's bright, and dark, fortnight.

43. The story of *Rucmana-dhara*, a king and a devotee of *Vishnu*, who would not break that fast; adduced as an example to kings.

44. Concerning the birth-day of *Rama;* a festival of nine days observance.

45. The virtue of reading; especially of the *Vedas*.

46. The virtue of meditation on the *Vedas*.

47. Relates to astrology.

48.
49. } These relate to the sexes, and their mutual intercourse.

50. Consequences, good or bad, of journeying on different days of the week.

51. Concerning the *Calpa*, or great period of time so called; the *Manuvanteras*, and *Yugas*, or included ages.

52. Concerning the ages, or duration of life, of mankind.

53. Relates to dreaming, and the particular import of dreams.

54. Account of the *Gandharbas*, or choristers of *Indra's* world, and their tendency to earthly attachments.

55. Relates to modes, places, and merit, of bathing.

56. On musical recitative, or minstrelsy.

57. On the art of archery.

58. Merit of reading the six *Sastras.*

59. Equity among relatives.

60. Rules concerning interest; crime of usury.

61. Relates to the *Sanc'hya* system, or ritual taught by *Capila.*

62. Concerning fatal sickness.

63. Relates to the meditation of a *Yogi*, or ascetic.

64. Concerning the *Mimamsa* system; the *púrva-carma,* or ritual of *Jaimini.*

65. On the *Upa-sastra;* explained as referring to the meaning of words, and proving the meaning by examples from books.

66. On the art of dancing, with its attendant music.

67. On the motions of the hands, or gestures, in dancing.

68. } These relate to the different classes, and various perfections,
69. } of the female sex.

70. Relates to palmistry, or divination by means of marks on the palm of the hands.

71. On the dignity of the mode of conveyance by riding on an elephant; proper only to kings, or persons of high rank.

72. Relates to the mode of conveyance by riding on a camel.

73. Relates to riding on horse-back.

74. On wearing jewels, as ornaments, and their value.

75. On accounts, or practical arithmetic.

76. On the medical treatment, especially by cautery, of cows, and similar animals.

77. On day-dreams; or visions seen, if sleeping, during the day.

Thus it may appear that a *mélange* has been produced, such as could not proceed from any other mind than that of a *Hindu.* As illustrative of mythology and manners, I consider the work to be of considerable value. It is complete, and quite uninjured. See a brief entry in the Des. Catal. vol. 1. p. 341 art. lxi, wherein it seems to be not inaptly termed "a summary of the religious and social system of the Hindus."

2. *Cavi-carna-rasaya,* No. 101—Countermark 490.

The title on the label of this book in Telugu and English, would imply an epitome of some poetical work. It is properly a version of the *Ramayana,* in an epitomized form, by *Vencata Ramaiyar* in the *Padya-cavyamu,* a more difficult kind of metre than the version by *Ranga-*

nat'ha, before adverted to. *Vencata Ramaiyar*, states in this book, that he epitomized in Telugu verse, not only this work but also the *Harischandra Nalópágnánam*, the *Cavyam*, and the *Raghava-pandityam;* and hence the term *Cavi-carna-rasaya*, is used by him as a general title of all these works; this book forming only a part. It contains the substance of the *Ramayana* of *Vâlmíca*, herein divided into the *Bála*, *Ayódhya*, *Kishkinda*, *Sundara*, and *Yudha*, *Cándams.* The contents of the *Aranya* section are blended with that of *Kishkinda.*

The manuscript is complete, and generally in good order. The first 25 leaves have the appearance of being very much older than the remaining portion. Considered as a poem, it has probably great merit in point of versification. To the author of the *Harischandra Nalópágnanam*, if this writer were the author, the composition of any other kind of versification, must have been little more than amusement.

Note.—The book is briefly entered in Des. Catal. vol. 1. p. 328 art. xxxi.

3. *Ballana raju charitra*, the tale of king *Ballana*, No. 55—Countermark 345.

4. The same, No. 57—Countermark 344.

This is a story, or perhaps a satire, in which the principal persons are the said king, and *Siva* under an assumed form. *Ballana-raja*, was a very liberal king, who gave to all comers what they desired; and, like the *Chacravertis* of old, on no condition swerved from a promise once given. *Parvati* is represented as discoursing with *Siva* respecting the exemplary devotedness of this votary; and it is agreed on, between them, to put the same to a severe proof. He accordingly assumed the form of a very personable *Saiva* ascetic of the *Jangama* class, causing great admiration by his appearance. On presenting himself before the king, the latter asked what he wanted: and he requested to be presented with a wife who could be certified to be virtuous. The king acceded to his request, and then had enquiry made among four castes of females, and from house to house, by his messengers. The result of the enquiry being fruitless, the king was reduced to the necessity of offering his own wife, which he preferred to breaking his word of promise. The proof of devotedness being complete, *Siva* appeared in his proper form; and, after bestowing many gifts on his follower, returned to *Cailasa.*

No. 55, is complete: the leaves are a little worn, or broken, at the edges, but not otherwise. The hand-writing is rude, and old fashioned. I think the MS. must have been copied many years since.

No. 57, is also complete, and the appearance of the palm-leaves is more recent; a little perforated here and there by insects, but not so as to injure the sense. The hand-writing is not modern; neither is it so rude, and antique as that of the other book.

Note.—They are entered in Des. Catal. vol. 1. p. 319 art. vi.

A third palm-leaf copy was briefly adverted to in my 3d Report; at which time I had not the advantage (now possessed), of having all the not-examined palm-leaf Telugu manuscripts in my possession.

5. *Chandrangada-charitra* "the story of *Chandrangada*," No. 29—Countermark 352.

This manuscript wants thirty four palm-leaves at the beginning; thenceforward it is complete to the end: the palm-leaves are old, worn, and a little perforated by insects, at the end. The hand-writing is large, bold, and modern.

The above title written on the label both in English and Telugu, is erroneous. The contents are only a fragment of the *Sri-rangha-mahatmya* in Telugu, in the kind of versification called *Dvi-pada.* The subject of that legend is the bringing of the image to *Srirangham,* an islet of the *Caveri,* by *Vibúshana.* An abstract of the legend was given in my 2d Report, from the Tamil copy. It may be consulted.

Note.—This MS. is entered in Des. Cat. vol. 1. p. 321, apparently as a duplicate copy of the following MS. from which it differs wholly, in subject, and in kind of versification.

6. *Chandrangada-charitra,* No. 28—Countermark 353.

This is a poetical love story, ending in a marriage, and is a work of invention; at the same an effort of poetical talent, by *Vencatapati-raja,* at first a soldier, and afterwards one of the poets of *Crishna-rayer's* court. To abstract such a story is not required. It is divided into six *ásvásamus,* or chapters, and is written in the *Padya-cávyamu* kind of versification, in recondite language, employing classical expressions, from the best works; and being redundant in words from the Sanscrit. The copy is on palm-leaves, not very old; yet variously perforated by insects, at

present not to the injury of the sense; but requiring to be looked at, from time to time; the hand-writing is neat, and modern.

NOTE.—It is entered in Des. Catal. vol. 1. p. 321 art. xii, to which entry I refer.

7. *Narasa-bhupaliyam*, a poem, No. 36—Countermark 483.

8.	The same.	ibid.	,,	37.	,,	482.
	The same.	ibid.	,,	38.	,,	484.

The copy No. 36, is complete in sixty-six palm-leaves, of recent appearance; two or three leaves at the beginning are touched by insects: the remainder is in excellent order.

No. 37, is written on Talipat leaves: the two first are wanting, also the 4th and 9th; right thence to the 32d leaf, where it breaks off without being finished. A few of the leaves, at the beginning, are damaged by mildew, and one leaf is torn.

No. 38, is an old manuscript, wanting seven palm-leaves at the beginning, but complete thence to the end, save only four leaves. It has the same title in English, on the label, as the other two; but though on the same general topic, as a flattering tribute to *Crishna-rayer*, yet it is a different work, by a different author, and on another heroine named *Chandrica*. See the notice of the book entitled *Chandrica Parinaya*, below.

The two first manuscripts are copies of a poem by one of the *Ashtadigajas* at *Vijayanagaram*; there having been eight learned men so termed, by way of distinction. *Timma-raju*, or by title *Bhattu-murti*, from poeticaleminence, was one of these eight poets of *Crishna-rayer's* court. This work, written by him, is entitled after the father of *Crishna-rayer*; and as usual contains the genealogy of the patron. Its subject is rhetorical and poetical, on the laws of the drama and poetical composition. It is highly esteemed, and regarded as a very superior work.

The three copies are entered in Des. Catal. vol. 1. p. 352 art. i but the last MS. should have been noted as a second copy of art. xiv p. 322 vol. 1. *ut infra.*

9. *Chandrica-parinaya*, No. 66—Countermark 355-

10. Another copy (labelled *Narasa-bhupaliyam*), No. 38—Countermark 484.

The first copy is complete from the beginning to the 128th leaf, containing seven *ásvásas*, or sections ; but the 8th is wanting to make the copy complete. It is apparently rather old ; but, with a very slight exception, is uninjured as to condition.

The copy No. 38 wants 7 leaves at the beginning, and about four at the end. It is seemingly as old as the other one ; but not being like that guarded by boards, it has suffered by breaking in the first, and last, leaves.

This work is a poem by *Mádhava-raya* of the *Rechalu* family (see account of the *Vellugotivaru*). The heroine is named *Chandrica*, with whom *Narasa-bhupaliya* (an epithet of *Crishna-rayer*), became enamoured, and took her to his court. On this foundation a poem is constructed : of course claiming no further notice.

The MS. No. 66 is entered in Des. Catal. vol. I. p. 322 art. xiv and No. 38. at p. 352. *ut supra.*

11. *Sancara-vijayam,* the triumph of *Siva,* No. 118—Countermark 321.

12. *Svarochisha-manu-samb'havamba,* the tale of the birth of *Svarochisa,* No. 30—Countermark 456.

These are two copies, neither one complete, of the same poem ; though the first is erroneously entitled on the label, both in English and Telugu, apparently by some ultra-*Saiva* devotee.

The copy No. 118 wants the 3rd leaf in the first section, and the 1st leaf in the second section : all the rest is complete, in six sections. The copy No. 30 wants the two first sections, the 3rd and 10th sections are found, and the 5th and 6th sections are wanting.

Both copies bear, within them, the title of the poem *Svarochisha-manu samb'havamba,* and the name of the author *Allasani-peddana,* son of *Chocaiya.* The writer makes the tale to proceed from an enquiry propounded by *Marcandeya* to *Vachchusa ;* and the outline of the subject proceeds on the wish of a *Brahman* to visit the *Himalaya* mountains : his wish is gratified by supernatural means, and certain adventures result ; when ultimately *Svarochisa-manu* was born, as the offspring of two *Gandharbas,* and became sovereign of *Jambu-dwipa.* The real object of the poem is to please, panegyrize, and flatter the poet's patron, *Crishna-rayer,* son of *Narasinha-rayer. Allasani-peddana* was

one of the "eight elephants" of *Crishna-rayer's* court; and of high eminence among those eight poets. He was greatly esteemed by his patron; and seems to have entertained a lively gratitude, in return for the kindness shewn. As regards fine, and harmonious, poetry these books are valuable; though one complete copy cannot be formed from them; but there is nothing of historical value in them. As such I pass them by; without minute abstract, or detail.

Note.—No 118 is entered in Des. Catal. vol. 1. p. 314 art. xix under its erroneous title of "*Sankara Cheritra*;" and is stated to contain an account of *Sankarácharya*, and to be written by *Andhra-kalidas-venkataya*, in which entry there must be a serious oversight. *Andhra-kalidas* did translate the Sanscrit work entitled *Sancara-vijaya* into Telugu; but this MS. is not a copy of that production. According to the Catalogue there should be a copy of the *Sancara-vijaya* in the collection in the *Nandinagari* character; but it is not in the portion of the collection transmitted to Madras; and the compiler of the Catalogue knowing the contents of the Sanscrit work, was possibly misled by the erroneous title on the label. I do not know how else to account for the mistake; which, for the rest, is not my concern. The copy No. 30 is entered in vol. I. p. 339, art. lix under its proper title; with a brief, but sufficient, and satisfactory, indication of the contents.

No. 118 is in good preservation. No. 30 is rather injured by insects; but not to any material degree.

13. *Deva-mallu-charitra*, the story of *Deva-mallu*, No. 32—Countermark 36.

This is a panegyrical poem, composed by a *Brahman* named *Vencaiya*, in praise of a district chief named *Deva-mallu*, or *Cupal-mallu*; the word *mallu* denoting the tribe, and *cupal* being an epithet applied by the eulogist, in consequence of the liberality of his patron, who gave money, not by count but by handfuls. *Deva-mallu*, had two brothers named respectively *Ramasvami* and *Vencata-ramanaiya*. The *mallu* tribe derive their name from living on hills, and are connected with the *Yánádulu*, and similar wild tribes, not aboriginally *Hindu*. The *Khonds*, I understand call themselves *Mallaru*, or hill people. This *Deva-mallu* seems to have been a mountain-chief; though the precise locality of his residence,* or rule, is not determinable; and indeed the mountaineers do not appear to form towns. As to the subject of the poem, it contains a pedigree and detail of banners, and prowess; but, for the rest, the

* Various mention of the *Mallu*-rulers occurs, in local papers concerning *Telingana*.

Brahman seems to have drawn largely on his own inventive powers, in the first instance, and then largely on the patron's eulogised munificence. The work is of no serious moment, as to history; yet otherwise not without use. Though in Telugu, as to basis, it is full, to affectation, of Sanscrit terms, in the usual manner of Brahmanical composition. There is some error in numbering the palm-leaves, by the copyist, but the work is complete. It is entered in the Des. Catal. vol. 1 p. 324, art. xx.

14. *Harischandra-cadha*, the tale of *Harischandra*, No. 33—Countermark 368.

15. Another copy No. 34—Countermark 365.

The substance of the narrative, contained in this poem, is derived from an episode in the *Mahabharata*. It is put into the mouth of *Vasishta*, as narrated by him to *Visvamitra*, in a dispute which occurred between them. *Harischandra* was a great prince, of extreme liberality, and being a *Chacraverti* it was not permitted him either to degrade himself as to caste, or to tell a lie. One day a mendicant *Brahman* obtained from him a promise, which involved a very large gift of money. The *Brahman* did not then take the money; but went away, and returned after many years: claiming his money with the interest due thereon. The king, unable to liquidate the debt, sold his kingdom, and still there was a balance due. The *Brahman* said that if he would tell a lie, or marry an out-caste woman, the whole of the money should be restored; but the king preferred abandoning his kingdom, and selling himself, his wife, and son, as slaves in order to pay the debt. In pursuance of this design he came, so this book says, to *Casi*; where his wife and child were purchased by a *Brahman*, and he himself by a *Chandála*, whose office was to attend burning-grounds. The *Brahman*, sent the boy out one day to gather wood, where being bitten by a snake the child died, and was by the mother taken to the burning-ground, at which her husband was, by this time, stationed to perform the work of a *Chandála*. He refused to do what was customary, without fees; and the mother had nothing to pay. He said that if she would give him the marriage token (synonymous in effect with a ring) it would suffice. She refused; but conjectured, from this demand, that the man must be her husband, as no one else knew that she possessed any such thing. At this juncture officers of the king of the country came, and took away the child, on suspicion of its being the king's own child that was missing;

and, the likeness being great, the king sent instructions that the man at the burning-ground should put the woman to death with a sword. *Harischandra* struck one blow, when flowers burst forth; he was about striking a second, when *Bhagavan* (or god) appeared; praised his exemplary virtues; and restored him to the possession of his former prosperity.

Remark.—This work, of the *Upa-jnána* class, of course bears evident marks of artificial structure; and the source, whence it is taken, being poetical it deals in the *ornamental.* The Telugu poem is *Dvi-pada,* or in two-lined stanzas, by *Yellana,* brother of the distinguished poet named *Allasani Peddana,* who was also entitled *Gaura-mantri.*

Note.—Both MSS. are entered in the Des. Catal. vol. 1. p. 326, art. xxiv and xxv.

As to condition No. 33 is in good order, though old; but wanting some leaves at the end. No. 34 is old, and considerably damaged, at the edges; it also wants four leaves at the beginning, and the 45th leaf in the middle.

16. *Harischandra Nalópágnánam,* No. 32—Countermark 369.

This is a manuscript containing five chapters, with two leaves left blank, towards the end of the first chapter; the same having been deficient in the one copied from. What remains is thenceforward complete, and in tolerably good order, being only touched by insects, in one or two places, without serious damage. It is an unusually beautiful, and modern, hand-writing.

It is a production of a peculiarly difficult kind; being read one way it contains the story of *Harischandra,* and in another sense it gives the story of *Nala.* There are according to the Des. Catalogue two other copies on paper, hence the deficiency in this one is not of consequence.

It is entered in Des. Catal. vol. 1. p. 326 art. xxiii.

17. *Dasaratha-raja-nandana-charitra,* the narrative of king *Dasaratha,* No. 95—Countermark 558.

This manuscript is complete in four sections; and remains in tolerably good preservation. It is a version in Telugu metre, of peculiar difficulty, concerning the father of *Rama-chandra,* that is *Dasaratha;* his sacrifice; of the services of *Visvamitra;* the birth and early adventures of *Rama,* down to his marriage with *Sita,* the daughter of *Janaca-jaya-*

raja. It is the production of *Bassavapa-cavi*, a *Vaishnava* and votary of *Rama*, whose taste for poetry was formed by the early study of the Sanscrit *Ramayana;* a part of which he transfused into Telugu, in this production, which is held in high esteem.

Note.—It is entered in the Des. Catal. vol. I. p. 322 art. xvii.

18. *Cavi-carna-rasaya*, No. 54—Countermark 376.

This book, with the same title as No. 101, before adverted to, is by a different author, and more varied in subject. Like that it is in the *Padya-cávyam* measure, and in five *ásvásas*, or sections. The author's name is *Narasimha* who was pratronized by a *Chola* king, but from the MS. being defective in the place, where that circumstance is mentioned, the king's name cannot be made out. The king is introduced as asking questions, on various subjects, and the poet replies. Hence the subjects of the five sections relate to the name and worship of God—the *Vedanta*-system—the customs, rights, and privileges of the *Brahmanical* order—the legend of the image and fane at *Sri-rangham* (near Trichinopoly)—and the subject, in brief, of the *Ramayanam*. As being an epitome, on these subjects, extracted from different books, the title is suitable; intimating a poetical abridgment recited in the ear of another.

Note.—There is only one copy under this title entered in the Des. Catal.; and from the No. of the label I apprehend this to be the copy, though the indication of contents in that entry agrees with the MS. No. 101. This book had not come under my notice, when the other one was abstracted.

This MS. is old; only slightly damaged by insects; there is one leaf broken, and the half lost, in the middle; and, at the beginning, the tops of the leaves are broken off, through wear and usage; so as sometimes to destroy the connexion, and sense, of the versification.

19. *Cambhoja-raja-charitra*, a tale of a king of Camboge, No. 87 —Countermark 373.

The foundation, or introductory matter, of this work is made to be the pilgrimage of *Mahudu*, a king of Camboge, who was afflicted with leprosy; and, who after relinquishing his kingdom to his son, visited different rivers and sacred pools, for the purpose of bathing therein; but without obtaining a cure. In consequence he directed his footsteps to-

wards the *Vriddha-ganga* (or ancient *Ganges*), and by the way met a woman, who enquired his object; and, on hearing it, directed him to another place, to obtain a cure; teaching him a *mantra*, or formule proper to be used. In consequence of this instruction, he went to a river where the sage *Dáttatreya* was employed in teaching disciples. He bathed in that river, and was cured. He then attended to the sage's instructions, and the substance of these is given in the following portion of the work; which, as announced, should contain six sections. These instructions are of the *Vaishnava* kind; and, in the earlier part, relate to the floating of *Vishnu*, as *Naráyana*, on a leaf, on the surface of the waters; the birth of *Brahma* from a lotus flower, proceeding from the naval of *Vishnu;* the creation, and destruction of worlds; some account of the *Matsya*, and other *avatáras*, of *Vishnu;* and thenceforward is a series of minor narratives, in which the legend of the shrine at *Srirangha*, has a precedence to the other tales. These relate chiefly to immunities proper to *Brahmans*; and tend to enforce respect to that order, and obedience to their directions, by examples of benefit derived from obedience, and of injury arising from an opposite course. Out of the six sections there are only three complete; the fourth breaks off abruptly, evidently owing to the copyist not having completed his task. The document is very slightly touched by insects; and may be considered in good order.

Note.—It is entered in Des. Catal. vol. 1. p. 327 art. xxix with a brief indication of the contents.

b. Manuscript books.

Manuscript book, No. 37—Countermark 374, *Cambhoja-raja-charitra*, a tale of a king of Camboge.

This is an imperfect copy of the same production as the preceding one. The book contains only the two first sections, with the title page of the third; and the appearance of the book would seem to intimate that some portion has been taken out, or lost. The paper is somewhat injured by insects; but the fragment does not claim restoration. It may be mentioned that both copies are in ordinary Telugu prose.

Note.—The book is entered in the Des. Catal. as above.

Manuscript book, No. 8—Countermark 698.

Section 1. Account of the village of *Sarpavaram* in the district of *Pit'hapur*, in the province of *Rajamahendri.*

The commencement is quite legendary. A brief reference is subsequently made to the *Dwápara-yuga;* to *Janamejaya*, and to kings of his posterity, down to the cessation of the *Chandra-vamsa.* Many kings subsequently ruled; being the *Chalukiya* race; commencing with *Vijayáditya*, whose son was *Vishnu-verddhana*, and his son was *Vijayáditya.* *Kulakesi*, *Kirti-verma*, and other names, follow; down to a supercession by the ruler of Cuttack, and then by a *Jaina* king. Afterwards the *Yádava* race governed; several names are specified. As usual, grants to fanes, and other buildings are alluded to; and the first date that occurs is Sal. Sac. 1017 (A. D. 1095) : others follow down to S. S. 1430; and they relate respectively to different periods of the rulers, as above mentioned. The latter part of the document adverts to Mahomedan influence, and interference.

Remark.—Though very briefly abstracted, yet the reading over of this document leaves the impression that its contents are of considerable value; meriting to be developed in full translation.

Section 2. Account of *Jallur*, in the before mentioned district, and province.

The *Jainas* ruled at a very early period, in this district. After the mention of that rule, in general terms, the document adverts to the race of *Janamajeya*, and thence deduces the line of *Vijayaditya*, the first of the *Chalukiyas*, who took their name from a fort on a hill named *Chalukiya-giri.* The names of the *Chalukiyas* are given, as in the last paper. The tale of *Sarangadhara* and *Chitrangi*, is narrated, in substance, as a matter of fact, occurring in the race of the *Rajahmendri* rulers. The date of Sal. Sac. 1124 subsequently occurs, as that of the installation of *Mallapa-deva Chacraverti.* The race of *Kâkati-prolaya* is given; one distinguished among them being *Pratapa-rudra* : these are usually termed the *Ganapati* dynasty. The power of the *Reddis* followed, who ruled in *Conda-viti.* The account subsequently narrates various details, relative to the Mahomedans; and, after giving the names of some zemindars, adverts to the government of the Honourable Company.

Remark.—This document also appears to be of value; to be used in comparison with similar ones.

Section 3. Account of *Corukondu* village in the zillah of *Sarpavaram* in the *Rajamahendri* province.

The commencement is legendary, and relates chiefly to the foundation of *Saiva* fanes; of which one hundred and one, are said to have been constructed. The foundation of *Corukondu* is ascribed to an ascetic. The names of *Pratapa-rudra*, and of *Mallapa-raja* occur, in reference to the fortification of the place. A marriage alliance with the Cuttack sovereign is mentioned; and various consequent details. An account is given of the siege of the fort, and its betrayal by treachery. It was taken by *Govinda-raja* of the *Gajapati* race, and its defences destroyed. The power of the *Reddis* succeeded. Details concerning fanes, with their endowments, and images; and inscriptions commemorating grants. One of the later chiefs named *Raghunat'ha-raja* died without posterity; and subsequently the district came under the control of the Honourable Company.

Section 4. Account of *Chamurla-cota* or *Bhima-varam*, in the *Pithapur* district of the *Rajahmendri* province.

Mention of certain shrines, and images. Subsequently *Rama-bhimesvara*, son of *Bhima-raja* of the *Chalukiyas* founded a town, and established festivals, and other usual observances. When the fane had gone to decay, the *Gajapatis* and *Reddis*, had it re-edified. In Sal. Sac. 1438 *Crishna-rayer* subdued this, and surrounding towns. Subsequent details relate to English, and French, ascendancy; and alternations of power. *Nizam-ali-khan* interfered; and, after wounding three local chiefs in battle, conquered the country. This indication of contents of course is little more than an index. There follow some minor details as to rivers, and lands fertilized thereby; of no consequence; not complete; and not copied.

Section 5. Account of the village of *Kimmuru* in the district of *Pithapur*.

The foundation is ascribed to a *Kirata-raja*, or a barbarian chief, near to the *Vindhya* mountain. Some details are added concerning his descendants: forest lands were cleared, and towns, built by them. At a later period some of the *Conda-vandlu* peopled portions of the neighbourhood. In Sal. Sac. 1124 *Mallapa-deva* ruled in this country; and made grants of land to a fane which is specified. Traces of the *Chalukiya* rule appear, in the matter of grants made to village fanes. The power of *Pratapa-rudra*, at a later time, succeeded. He was the

most celebrated of the chiefs of *Warankal.* After him came the *Reddis.* *Crishna-rayer* afterwards conquered this district. When the *Gajapati* power reverted to its former state, the *Reddis* again ruled. *Timma-raja*, and afterwards *Narayana*, a *Ganapati* prince, governed. Subsequently one named *Sitapi-khan* acquired authority. The ascendancy of *Bala bhadra-raja*, of the *Pusa-pati* race, followed. *A sirdar* from Golconda subdued the country. Some fighting, in which the Mahomedans were concerned — — — — (here the remaining two, or perhaps three, leaves of the book are lost).

General Remark.—This book was found to be very much damaged; by reason of damp, and destruction of large portions of paper, near the outward edges, by insects. One cover was wanting; as also a few sheets on that side of the book; the remaining leaves are loose, and separated from the front cover. The hand-writing, being bold and large, facilitated the restoration; which has been, upon the whole, accomplished, though not without some unavoidable breaks in the connexion. The contents, it may appear, are of average interest. The writer seems to have had most at heart a record of matters connected with fanes, and images; but the dates and names of rulers, given in connexion therewith, are of some value; certainly more than I had at first anticipated.

Manuscript book, No. 1—Countermark 894.

This book is marked Malayalam, but probably as relating to that country: the language is Telugu.

Section 1. Account of ancient matters relative to the *Vainàd* (or Wynaad) district.

The earliest rulers of this district were of the *Vedar* tribe; concerning whom the same general outline is given, in this paper, as in sect. 11, MS. book No. 3 (B. Malayalam 2d Report); to which, by consequence, I refer. *Curumba* chiefs subsequently ruled. The boundaries, and divisions, of the district are stated; and some detail is added as to one village, in the proximity of which a species of earth yielded a proportion of gold ore, worked by three zemindars. A notice is given of *Banásura-cota*, a steep, and remarkable, mountain; traditionally said never to have been ascended by any human being: with some legendary adjuncts. Details follow of vegetable productions of Wynaad, and some reference to traders, as also to a few scattered *Vaishnava*, and *Saiva*, fanes, and a small proportion of Brahmans found therein.

Section 2. Legend of *Tirùnelli-cshetram*, in the Malayala country.

It derives its name from a *Nelli* tree (phyllanthus emblica) under which *Brahma* paid homage to *Siva.* Many *Brahmas,* to the number of seventy-two, worshipped *Siva* there. In a cleft some petrified *Nelli* fruits, and an emblem of *Siva,* are traditionally said to have been found by a *Brahman.* A specification of *tirt'has,* or sacred pools, belonging to the place is given.

Section 3. Notice of the buildings at the fane of *Rama-svami* at *Talacheri* (or Tellicherry).

The details of this brief paper are not adapted for abstracting ; nor are they required for any useful purpose.

Section 4. Account of the principal fanes, and shrines, in the Travancore country.

These are situated at *Canya-cumari,* or Cape Comorin ; at *Susêndram ;* at *Padmanâba-puram ;* at *Tiru-vitan-kâdu,* of which the *Saiva* image is called *Keralésvara* (from having been established by a *Kerala* king) ; at *Tiruvattaru,* a *Vaishnava* shrine ; and some subordinate places at *Colattur;* also at *Chenganur,* dated as far back as the time of *Parasu-rama.* The details of these shrines are of no great importance ; except only as they yield faint traces respecting rulers, by whom they were founded.

General Remark.—This book being damaged, written in pale ink, and injured by insects, was re-copied ; though the contents, are not of great consequence.

Manuscript book, No. 54—Countermark 744.

The contents are four journals from *Narrayan-rao ;* the first from January to July 1815, in the *Vencatagiri,* and *Udiyagiri,* districts of *Telingana,* the other three are relative to the Hyderabad country, and extend from December 1815 to the end of March 1818. One or two leaves are loose owing to careless binding: the ink is good ; the country paper in the middle is touched by insects ; but the leaves having been *unglued,* and separated, the progress of injury has been arrested. The book will last, as it is, for several years.

Manuscript book, No. 55—Countermark 745.

It contains three journals of *Vencata-rao* for 1818-19-20, in the Hyderabad country; is written on various descriptions of country paper, some

free from injury others touched by insects; though but slightly; the ink is good; the whole perfectly legible, and calculated to last for a considerable period.

Manuscript book, No. 56—Countermark 746.

A paper or journal of *Vencata-rao* for March, and April 1818, in the Hyderabad country, and three journals of *Ananta-rao* for 1817 18-19, in various parts of *Telingana;* chiefly in the Bunder district, or neighbourhood of Masulipatam. The first document is in perfect preservation; the others, in various degrees, touched by insects. The leaves have been separated, and exposed to the air. The whole is legible; and, with common care, will last some time.

REMARK.—I have no doubt that, making allowance for the limited view which a native usually takes, as much of interesting incident, and description, might be gleaned from these as from other ordinary books of travels. But this gleaning, if ever attempted, must be an after work to my present introductory examination, and report. As heretofore observed, in similar cases, I pass these journals by, without minute attention.

Manuscript book, No. 32—Countermark 722.

Account of the rulers of *Anumacondu* and *Oragalu,* otherwise called *Ekasilà-nagara,* with their conquests in *Telingana.*

Geographical site of *Anumacondu* defined. Legendary statement concerning the marriage of *Siva,* as accounting for the formation of the shrine. Subsequently a *Vedar-raja* named *Yeruka-deva-raja* laid the foundation of a village, at *Anumaconda;* locating his family and relatives there. His sons were *Anumadu* and *Condadu.* A small fort was built. The latter of the two formed another village, called after his own name; his relatives followed the same example, by forming other villages. About this time the *Jainas* prevailed; and a *Jaina* fane was formed, on the top of the hill. *Bhima-razu,* a chief, ruled; but whether as a subordinate, or head, cannot be determined; as a Mahomedan had built a stone, containing an inscription, into the wall of his house; so that only one side of it was legible. *Bhima-razu* is supposed to have been a *Jaina.* The account is commenced with the mention of one of the *Kakati* race, who built the large fortress; and what follows relates to that race. The lunar-race is specified down to *Cshemaca.* From that line

are deduced *Vijayáditya* and *Sóméndra.* The son of the first was *Vishnu-verddhana*; of the other, the son was *Uttunga-bhuja.* These two latter divided the country between them. *Vishnu-verddhana* settled at *Dherma-puri* on the western bank of the Godavery river. Four hundred villages, or towns, became subject to him. His son was *Nanda* who built a town called *Nanda-giri,* in which the four castes of *Hindus,* were located. His minister was named *Danda Sassi-nayaca.* *Nanda* formed a marriage alliance with the daughter of a *Chola* king, at Conjeveram; and on returning, equitably governed his kingdom. His son was *Vijaya-pala,* who was munificent. The son of the latter was *Sôma-deva-raja,* who formed extensive, and numerous establishments for *Brahmans.* He assembled various herds of cows, altogether amounting to 3100, which were placed under the care of various herdsmen; from *Bhadrâchala,* even to the banks of the Godavery. *Bala-hodu,* ruler of *Cattaca-puri* (Cuttack), hearing of this circumstance, made a foray, and took away some cattle. A war followed, in which *Sôma-deva* lost his life. His widow took refuge in the house of a *Brahman,* where she had a son named *Mâdhaverma* who conquered his father's enemy, and installed the son of the latter, on the throne at Cuttack. Hearing of which the aforementioned *Yeruka-deva-raju* fled, and *Madhava-verma* took possession of his district. The date of *Madhava-verma* is carried as far back as Sal. Sac. 390 (A. D. 468); and his reign is extended to 160 years. His son was *Padma-sena,* who ruled 74 years; down to Sal. Sac. 464. He overcame the Cuttack ruler, that had assaulted him; and levied tribute from that country. The son of *Padma-sena* was *Venama-raja,* who ruled 73 years, down to Sal. Sac. 537. His son was *Oranga-venna,* who conquered the invading Cuttack ruler, and put his son in the father's place. He conquered other chiefs, and ruled 73 years, down to Sal. Sac. 610. The son of *Oranga-venna* was named *Bendi-gundama-raja.* He took some villages from the Mahomedans, and levied on them eight lakhs of gold coins. He fought for 3 months with the Cuttack ruler; and, having conquered him, took thence fifty-five lakhs of gold coins. He was liberal. He ruled 78 years, down to Sal. Sac. 688. His son was *Yeruca-deva-raju;* who being a child, the mother exercised authority as regent. She levied extensive tribute on surrounding countries, and fighting six months with the Cuttack ruler, overcame him, and put his son in the father's stead; at the same time taking tribute. The young man *Yeruca-deva-raju* was by her caused to be crowned. This queen, whose name was *Kôntala-devi,* governed 19 years, down to S. S. 702. *Yeruca-deva* conquered the ruler of *Deva-giri* (Deo-ghur or Dowlatabad?) and took eighty lakhs of gold coins from him as tribute. He also

overcame and took tribute from *Vijaya-narasinha-vijaya-rayalu*, the ruler of *Vijayanagaram*. He made suitable largesses to the Brahmans; and ruled 79 years, down to Sal. Sac. 786. His son was *Bhuvanaica-malla*, who conquered the Cuttack king, taking away banners; and, as before, installed the son in the father's place. Not being satisfied with the tribute paid by the ruler at *Vijayanagarum*, he again levied war, and received further villages and presents together with five superior women, as wives; to whom he made grants in free tenure of lands, extending even as far as Conjeveram, to find them betel and areca (or pin-money). He also gave an agreement, engraven on gold, to the chief at *Vijayanagarum*, certifying that he would not again levy war. He largely built, and endowed, various fanes and shrines. He ruled 86 years down to Sal. Sac. 872. His son was *Tri'hvvana-malla*, who as before, fought with the Cuttack prince, and installed his son. He governed 86 years, down to Sal. Sac. 956. The son of *Tribhuvana-malla*, was *Kakati-prôl-raju* who being a minor, his ministers disagreed among themselves; which *Balla-hundu* the *Gajapati* of Cuttack hearing, besieged *Anumacondu*, during twelve years, by troops under the orders of a general named *Visvanat'ha-deva;* who was in the end repulsed by *Kakati-prol-raju.* The latter formed a residence at some distance, at *Gangápuram*, and the people of *Anumacondu* were accustomed to send thither presents, on a small cart. One day the axle of the cart broke; and, being left on the spot, the next day the iron was found to be transmuted into gold. The king, going to the place, found there a golden symbol of *Siva;* and iron, brought thither, being changed into gold, he thence acquired the means of extensive building. The said symbol was removed, and established on a small hill, consisting of a single rock (whence the name *eka-sila* in Sanscrit, and *orangal* in Telugu). A fane was built, and also a town around it; in which there were 500 *Saiva* fanes and 300 *Vaishnava* fanes, ten shrines of *Ganesa* and ten of *Virabhadra ;* to which festivals, and all customary appurtenances were appropriated. As iron, being brought into contact with the aforesaid image, was uniformly transmuted into gold, he in consequence had a vast quantity of golden utensils formed, so that he acquired great celebrity; and, in his time, the custom of weighing gold was first introduced. He had two sons: the eldest, being born in a *muhurtam*, or astrological time, unpropitious to the father, the said child was taken and lodged in a fane; the officiating hierophant in which gave to the boy the name of *Rudra.* His father one night went alone to the fane, and *Rudra* mistaking his father for a thief, mortally wounded him with a sword. The king made known to all around, that the child was his son; and, causing him to be installed, died eight days after receiving the wound. *Kakati-prol-raju*

ruled 73 years, down to Sal. Sac. 1031. The aforesaid *Rudra* added to the number of fanes; among others those of *Ganapati* (or Ganesa) and made war against the Cuttack *raja*, whom he killed; put his son in the father's stead; and levied tribute on the country. He also subdued other countries; and ruled 78 years, down to Sal Sac. 1109. The son of *Kakati-rudra-raju* was *Ganapati-raju.* His uncle *Maha-deva-raju,* the younger son of *Kakati-prol,* and younger brother of *Rudra,* was instituted as second in authority (in the same relation as Cæsar stood to Imperator at Rome); and, going on an expedition against *Deva-giri,* was therein slain. His secondary rule lasted three years, down to Sal. Sac. 1112. The minister of *Ganapati* was named *Siva-devaiya;* and the said *Ganapati* making war against the *Deva-giri* ruler, who had killed his uncle aforesaid, conquered that chief, and took his daughter, named *Rudrana-devi,* to be his wife. This prince was munificent to *Brahmans.* He made war on *Valla-nadu,* and took tribute from it: returning thence to Nellore, he had a dispute with *Ancana-bhuja* from whom he took some banners, and re-instated there the former ruler, whose name was *Manmatha-siddha.* He had a reservoir formed at that place; and twenty-four forts constructed. He subdued 68 towns. He had many other works accomplished; among which the building a town near *Gunga puram* (named after himself *Ganapati-puram*) was one. He conquered the *Odriya* (Orissa), and *Pandiya,* kings; took many countries; and levied tribute. He constructed, at *Sri Sailam,* four *Saiva* fanes; some *Vaishnava* fanes; and had four reservoirs excavated. To his spiritual preceptors he gave eleven villages. A daughter born to him, named *Umaca,* he gave in marriage to *Vira-bhadra-raja,* and relinquishing his own kingdom to *Siva-devaiyan,* his minister, he died in Sal. Sac. 1180, after ruling 68 years. His widow *Rudrama-devi* ruled with celebrity, for some years; and then transferred the crown to *Pratapa-vira rudra,* a son of her daughter, *Umaca,* by *Vira-bhadra-raja,* at a time when he was sixteen years of age. She exercised the regency during 38 years, down to Sal. Sac. 1216. *Pratapa-vira-rudra* patronised the Brahmans, descendants of those first settled in the country, and provided for them proper employments. It is said that he was taken prisoner by the Mahomedans. He reigned, as supposed, about 76 years; and after that, he and his wife died. The manuscript contains a minute account of the receipts and expenditure of this prince; needless to be detailed. His minister, and his younger brother, fled into the woods, and wilds. His son, who succeeded him, was named *Vira-bhadra-raju,* who carried on war, for twelve years, against the *Narapati-rayalu* of *Vijayanagarum.* But the Mahomedans coming to the assistance of the *Rayalu* overcame *Vira-bhadra,* and relinquished to him, only a small portion of his former

dominions. Afterwards *Malla-deva*, of the *Raghava* race, ruled; as appears by an inscription. But *Sitapi-khan*, a Mohomedan, coming from Delhi took *Orangal*; and, as the descendants of the *Kakati* family were within the fort, he gave them just enough, for their subsistence; while he himself conducted the government. A Sanscrit inscription, in his time, is dated Sal. Sac. 1425. Subsequently when *Crishna-rayalu* ruled at *Vijayanagarum*, he took *Condavidi*, *Condapalli*, *Inama-conda*, *Balapa-conda*, *Nagarjuna-conda*, and other forts; he also overcame the Mahomedans at *Orangal*, and assumed the place. He gave to the *Kakatiya* race a sufficient subsistence. In the time of *Achyuta-rayalu*, *Orangal* was under his rule. *Rama-rayalu* was second in power to *Sada-siva rayalu;* but, fighting against five *Padshahs*, confederated against him, he was killed by them; and they assumed the government of *Orangal.* The Shah, ruling at Golcondah, had authority over *Orangal*, and *Anuma-conda.* The *Nizam* of Hyderabad, named *Azuph-sah*, ruled over *Orangal.* His son *Nizam ali khan*, inspecting the fort of *Orangal*, had some of the guns, which were placed there by the *Kakati* race, transmitted to Hyderabad. He gave the said fort, as a jaghire, to *Nuran-mulk:* it remained with the same in the time of *Sicandar*, son of *Nizam-ali.* *Orangal* was plundered by *Pindarri Mahrattas* in Sal. Sac. 1738 (A. D. 1816). The descendants of the *Kakatiya* race had, by this time, retired altogether to some patrimonial estates, at *Bassanava*, and other places, whither the Nizam sent to demand from them tribute, or taxation; when they transmitted to him, in return, cowries, or small shells, current in some places for small sums of money. The Nizam, understanding thereby that they were very poor people, remitted thenceforward all tax or tribute from them; and they continued, when the account was written, to reside at *Bassanava*, and other villages.

Remark.—The preceding is a very important manuscript. Its authenticity, in some places, may be matter of question, particularly in the dates; but all deductions being made, this will remain one of the valuable documents in the collection.

There follows, in the book, another document; being an account of *Calyana-patnam.*

The contents: the legend of *Nandi*, the vehicle of *Siva* coming down to earth—the origin of the *Vira-saiva* sect—and an account of circumstances which occurred at Madura. Any fuller notice of this document is referred to the abstract of the Telugu palm-leaf manuscript No. 128. 332 entitled *Basavesvara Calagnana.*

Manuscript book, No. 7.—Countermark 697.

Section 1. Account of *Bandar-machlipatnam* (or Masulipatam).

Local situation with reference to the *Crishna* river; its fanes specified. Its roads are frequented by shipping. Fishermen reside in neighbouring villages. A new town named *Inamu-kuthuru* now called *Ina-kuthuru* was built not far off. A town was also built by the *Mukundi* kings called after their own name. A *Mukundi* king, according to an inscription in a neighbouring fane, removed the *Bauddhas* and *Jangamas* and established the *Brahmans* in their room. The name of *Machli-bander* is said to have arisen from a very large fish being caught by a *Baunddha*, so that he was called *Matsya-baunddha*, the name devolving on the place, where he lived; and becoming corrupted in Dekhini to *Machli-bandar*, or *Machli-patnam* (whence also the European corruption into Masulipatam).

The *Mukundi rajas; Pratupa-rudra;* the *Gajapatis*; the *Reddis; Crishna-rayer;* and others; are stated to have successively ruled over this place, and neighbourhood. A list is given of suburban-villages, founded, or enlarged, by various persons, from S. S. 1480, down to S. S. 1739 (A. D. 1558—1817). It was under the Hyderabad govenment, down to Fusly 1178 (A. D. 1770). For seven years afterwards it was under Monsieur Bussy, and the French. It came into the hands of the English, as a jaghire from the Nizam Ali Khan. A total of village districts is given; several of which manufacture salt. Some further particulars are added as to fanes, and their festivals, at *Inamu-kuthuru.*

Section 2. Account of *Mavunje-mutlur.*

The account of this place commences with S. S. 1606 (A. D. 1684). Some time after *Anavema-reddi* instituted a Brahman, named *Mritanjiyar*, to the charge of the fane, whose son was *Somayajin;* and the line of Brahmans downwards is given. The Mahomedans, under Sultan Abdalla Hassein, continued the privileges of the fane. Various details of Mahomedan interference. Aurengzebe took tribute thence. There are also revenue details of proceeds, and expenditure, connected with the village, or town, and its adjuncts.

Section 3. Catalogue of books in the possession of *Lingaya-chetti*, son of *Mamiddi-vencaiya-chetti.*

The catalogue was made at the request of Col. Mackenzie, and given in to him. It exhibits the names of Sanscrit and Telugu manuscripts, to the total amount of 282 books, or volumes, on various subjects of ritual observance—mythology—poetry—fictitious romance—some little history—law—and miscellaneous subjects. Several of the titles are

those of manuscripts now in this collection ; rendering it probable that these were purchased from the person above mentioned.

Section 4. Account of the village district of *Amritalur.*

A herdsman of old cut down the forest-wood and established a small fane ; called by the name of *Amritesvara.* After the introduction of the era of *Salivahana*, the *Gajapatis*, and others, ruled. The first date is Sal. Sac. 1607 (A. D. 1685) in the time of *Gana-pati-deva* ; who coming to bathe in the river *Crishna*, at the time of an eclipse, made over this district to certain *Niyogi-Brahmans.* Various traders had settled in the village : these all left it, after the supercession of the former rule by the Mahomedans. In the time of *Nazir-jung-bahader* this village district was made over to the French. In Fusly 1168, it came under the Honourable Company ; who continued all customary observances.

Section 5. A connected account of seven village districts, in the Ellore Circar.

Narasimha-rayer ruled over the whole of these villages in Sal. Sac. 1166 (wrong date). His successor *Rama-rayalu* introduced a colony of Brahmans to *Gudlapalli.* The Mahomedans subsequently plundered, pillaged, and burnt, in these districts, during two months ; giving over the management on their account to *Raganatha-pantalu*, a *Brahman.* Subsequent *Amils*, and a war connected with the administration of one of them, are specified. All other details relate to land-holders, and their respective rights and tenures.

Section 6. Account of *Gokarna-mat'ham* of *Mavunjè.*

In early times a person of eminence had the waste lands cleared, and a fane built, bearing the name of *Gokarna-svami.* Details of the pupils of the hierophant, and their respective successions. Other details chiefly relate to revenue proceeds.

Section 7. Account of *Mavunjè-modukúr*, in the district of *Satenapalli.*

A merchant had the district cleared, and a fane, and village, built. In Sal. Sac. 1556, the district was made over to the *Niyogi* Brahmans, by the *Ganapati-raja.* In the time of *Kulottunga-chola*, some additions were made in the matters of fanes and festivals. *Ganapati-raja*, son of *Kakati-raja*, subsequently made other like additions. After the Mahomedan supercession, the district was given over to *Brahman* managers, on their account. About 1225, Fusly, the Government of the Honourable Company succeeded.

Section 8. Account of *Mavunje-chanduvolu* village.

Legendary statement of its names, in the three first ages. It was called *Chanduvolu* in the *Cali-yugam*. After the commencement of the era of *Salivahana*, several fanes were constructed, with various appurtenances, by *Kulottunga-chola*. In S. S. 903* there was a Jaina ruler. In S. S. 1215, *Pratàpa-rudra* ordered some additional matters, for the advantage of the fane, to be constructed. The rule of the *Reddis* followed. In S. S. 1250 they had erected a fort; and they ruled from S. S. 1300 down to S. S. 1486. The Mahomedan authority followed, under the Nizam Ali Mulk. The district was made over to the French. The mention of *Satyanat'han*, and his successor, as Roman Catholic ministers of religion occurs. On the defeat of the French, the English power succeeded. Some new fanes were constructed. A few details on this latter point conclude the paper.

Section 9. Account of the village of *Chébrolu.*

Other names in previous *Yugas*: called *Chébrolu* in the *Cali-yugam*. *Tribhuvana-deva-malla-raja* of the *Chalukiyas*, coming to bathe in the Godavery river, made, at the instance of his minister, a donation to the fane, commemorated by an inscription. The *Jainas* were numerous, in those days; and this village was sometimes called *Jainabrolu*. *Rudra-deva* of the *Kakati* race, added much to the fane, in reference to *Saiva* emblems. Nothing farther particular occurs, down to the Mahomedan rule.

Remark.—The condition of this book was so bad, by reason of injury from damp and insects, that I doubted the practicability of its restoration. It has however, on the whole, been successfully effected; and though the details are but of minor interest; yet the investigation will assist in estimating the value of similar books. From the specimens that have been given, it is found that there is a prevailing uniformity, as to the indicated succession of leading powers in the north: the outlines being the same in all.

Manuscript book, No. 15—Countermark 705.

Section 1. Account of the zemindar of the *Saroda* district in the Northern Circars.

Anciently this was a wild country under a *Cóthu* raja, who ruled over savages. Subsequently one named *Savayi-Singh* came from *Gocula*

* This date is uncertain.

Brindharanam, and colonized the neighbourhood; forming a town, with various appurtenances.

Section 2. Account of the *Purusho'tama-devas,* and rajas of former ages.

A Sanscrit title. Reference to the *Satya-yuga,* with its character; and mention of *Maha-bali,* and *Vishnu,* in the *Vamana* avatar. Reference to other *Yugas,* to *Parasu-rama,* and his destruction of the *Cshetriyas.* Reference to *Manus,* and periods of their rule. Some kings of the solar-line. Excessive periods of time ascribed to them. Some kings loosely mentioned in the *Cali yuga;* who ruled, as we know, in different and distant countries: but are herein brought together in one successive line. There is rather a more connected list of *Gajapati* princes; but with incredible dates ascribed to the several periods of reign. Some other loose details follow, down to the accession of the English Government.

Remark.—The first part of this paper is merely a crude extract, from the substance of old *puránas;* and resembles very much what is termed *Bhugola-pramánam* in a distinct Tamil manuscript. The account, so far, is of no value; and the remainder partakes very much of the same character; disappointing the expectation that might be founded on the English heading prefixed to the section.

Section 3. Account of *Naráyan-suru-harischandra,* zemindar of the *Tarlà* district.

The founder of the district came originally from Nagpore; and served one of the *Gajapati* princes of Orissa. "By favour of *Jaganat'ha,*" the idol so called, he acquired this district; and there are added some details concerning the successors in the zemindary.

Section 4. Account of four villages, of the said district.

Merely a list of small districts; and of towns, or villages, contained in them.

Section 5. Account of *Cari-cala-cholan.*

This paper contains an account of two *Chola-rajas:* the first name that occurs is *Vira-vi rama-cholan,* with some details concerning him; such, for example, as his fixing pillars of victory, as far north as Himalaya. *Cari-cala-cholan* is next mentioned: and an extravagant account of the extent of his power, being puerile exaggeration, is given. In the embankment of the *Cáveri* the god *Isvara,* it is said, assisted. The *Chola* king put out one of the three eyes of the *Mukant'hi* kings. Many

kings were summoned to assist in the embankment of the *Cáveri*; and those who refused to come were punished. The whole of the remainder relates to *Cari-cala-cholan's* acts of government. The wife of the *Ballála* king was of great assistance to his kingdom, [it is supposed that the wife of *Vishnu-verddhana* is intended]. According to this paper *Cari-cala-cholan* exercised an extensive influence; but the marks of exaggeration contained render the authenticity of the document doubtful; at all events, great deductions are requisite.

General Remark.—In point of condition, this book is in tolerably good order and preservation. There is nothing of value, unless the last paper may be considered to possess that character. This may merit reference and further consideration; and with ordinary care will last many years, for that purpose, without urgent need of restoration.

Manuscript book, No. 2—Countermark 692.

In this small octavo book, divided into thirty sections, are brief accounts of thirty-six villages, and six *agraharams*, or Brahmanical establishments. The details are minute, and trifling; frequently being little more than a list of different places: the whole not requiring any abstract. The book is at present in very good preservation.

Manuscript book, No. 8—Countermark 892.

This small, and thin, quarto contains a journal of *Crishna-rao*, during his journey through the *Sunda* district from August 1813 to May 1814. It is labelled "Canarese," but is in the Telugu language; the said label, as in similar cases, referring rather to the district than to the language. It is written with indelible ink; injured only as regards compactness of binding; but for the rest in good preservation.

Manuscript book, No. 9—Countermark 893.

This is a continuation of the same person's journal, down to August 1814. It is in very nearly as good preservation as the last mentioned book, and the binding in better order. Both are passed, as usual in the case of such journals.

Manuscript book, No. 5—Countermark 802.

This book is endorsed as relating to the Ceded Districts; and the contents refer to seventeen villages, with their districts, containing details similar to those heretofore given in similar cases. Whenever such books have been found to be damaged, and in danger of speedily perishing, and have been restored, I have then, in reading over the restored copy in collation, at the same time abstracted the contents. This book is in perfect condition; and will last a long time. In such a case the minute labour of abstracting does not seem to me to be called for; unless the contents were of commanding importance, which is not the case in this instance. This book is complete.

Manuscript book, No. 6—Countermark 803.

This book relates to twenty villages of the Ceded Districts. A part of the leaves, in one place, has been torn out, and lost. The remainder of the book is in perfect preservation; and the same remark, as in the last instance, is applicable.

Manuscript book, No. 10—Countermark 807.

Account of the Cusbah, or revenue district of *Tanda-patti* in the Ceded Districts.

This is also a local account; with the usual legendary, and minute, details. It is in perfect preservation; and, for the present, needs no further attention.

Manuscript book, No. 12—Countermark 809.

In this book are contained local details of fourteen villages in the Ceded Districts. The paper is quite uninjured, and the ink indelible. Two leaves were loose, and the back of the cover, having been merely pasted on, was loose. These little defects being amended, the book remains in perfect preservation, and is subject to the same remark as No. 5. The four books from that No. are labelled as pertaining to the Ceded Districts: hence it may be as well to note, that the language in which they are written is not Canarese, but Telugu.

Manuscript book, No. 7—Countermark 909.

Section 4.—Genealogical account of the *Nayar* of *Cavalapa-nad* in Malayalam.

The introductory matter is legendary, and has been before adverted to (See 3rd Report).

A woman was delivered of a female child near the hermitage of a *rishi*, who took compassion on it, though it was of outcaste origin. But in consequence of some oracular communication that this child would become his wife, the *rishi* indignantly flung it into a river: down which it floated; until it attracted the compassion of a Brahman woman, who took it and reared it as her own. After some time, when her *protegée* was drying her hair, after bathing, the Brahman woman discovered that her *élevée* was of an outcaste tribe, and drove her away. The banished-one wandered about; and, in process of time, had twelve children by different persons, each of which children was abandoned, and reared by foster parents: the several children being adopted into the tribe of the persons bringing them up. Among these children were *Camaren*, and *Raman*; who became headmen of a district, and the ancestors of the *Nayars* of *Cavalapa-nad*. Their line of descendants, divided into four lineages, is given. In some cases where children failed, others were adopted. The rule of the four lines seems to have been over an extensive tract of country. A few details are given; but it is stated that in times of foreign invasion, some records were lost. Account of expenses incurred at the installation of a *Nayar*. A list of towns, or villages, forming a district. Several inhabitants, as settlers, were allowed for a time to clear, and cultivate ground, rent-free; but afterwards paying a tax. An account of interference from the Cochin, and Travancore, *rajas* appears. Afterwards Hyder Ali gave trouble. The English are mentioned; and especially the name of Governor Duncan, of Bombay. The English opposed Hyder Ali. From the time of Tippu Sultan, the district came into the possession of the Honourable Company. The situation of the district is, I understand, midway between the former possessions of the Cochin, and Calicut, rajas.

Remark.—The other papers in this book are noticed, in the preceding Tamil portion of this report (which see). In point of condition this paper is in better order than any other one in the book. With ordinary care it will continue legible for several years: and, since such is the case, the contents do not seem to be of such importance as to require restoration at the present time.

Manuscript book, No. 21—Countermark 366 and No. 22—Countermark 367.

These are two thin quartos, containing the two copies of the poem entitled *Harischandra Na'opá nan'm.* referred to in the foregoing portion of this report. Both copies are complete, in five *asvásas*, or sections. The ink is good: the country paper slightly touched by worms; but, with a little care, both copies will last for many years.

Manuscript book, No. 32—Countermark 320.

Velugot'váru-vamsava'i, or account of the local chiefs who ruled at *Vencatagiri*.

An abstract of MS. book, No 49, section 8, was given in my second report, being the same subject. This copy had not then met my eye; not having, at that time, the collection entirely at my control. It forms of itself a neat small quarto, strongly bound in leather, and in very good preservation. It is also complete, and fills a larger document than the section above referred to, from being written in a bolder hand, with spaces left between divisions of the general narrative.

C.—MAHRATTI.

Manuscript book, No. 1—Countermark 644.
Ibid. No. 2—Countermark 645.

Cadha-ca'pa-taru, or an abridgement of various *Hindu* writings in the *Bharatam, Bhagavatam, Ramayanam, Puranas*, &c.

This title, written in English at the beginning, tolerably well defines the contents. The term *Calpa-taru*, is however, rather more ingenious than therein appears. In the paradise of *Vishnu* there is said to be a tree of plenty, called *Calpa-vri'sha*, which offers whatever is wished for, by the person approaching it. Even so, this book gives variously, and plentifully, to the reader. The work is in two volumes, written on French paper, with good ink; and continues in perfectly good preservation.

The *Balband* character is employed, being only a slight variation from *Deva-nagari* : the language is a *Pracrit*, having so large an admixture of Sanscrit words, and derivatives, mingled with the Mahratta idiom, as to make it a sort of high dialect. The work is entered in Des. Cat. vol. 2 p. 98, art. v with so full, and good, an index of contents, as to render any similar minute specification, in this place, not requisite.

Manuscript book, No. 64—Countermark 861.

A journal of *Narayan-rao*, in his journey through the Ceded Districts, from August 1809, to July 1810. The ink is good ; the paper only very slightly injured. The book, as it is, will last for many years.

Manuscript book, No. 66—Countermark 863.

Two journals of *Ananta-rao*, in his progress through the Ceded Districts, from January to September 1811 ; and from October 1811, to August 1813. The paper very little injured where written on, and the ink durable.

Manuscript book, No. 69—Countermark 866.

Journal of *Ananta-rao* for 1811 ; letters sent by him in 1810 : letters sent by *Narayana-rao* in 1811. Journal of *Narayana-rao* from January to June 1813, in progress through the Ceded Districts.

Letters sent by him in the years 1812, and 1813, and journal for the year 1811, when travelling in the above districts. A rather large book, closely written with durable ink, on country paper, but very slightly damaged.

Such journals I pass without minute remarks. They may possess some details, not wholly destitute of interest ; but the voluminous nature of the collection forbids any loss of time, where the field of research has little promise. All such journals ought notwithstanding to be read over at some future period.

Manuscript book, No. 36—Countermark 790.

Section 1. Account of *Narayan-jiyar*, one of the managers of the fane at *Sri-rangham*.

The account commences by giving a reason for the name, which it may be sufficient for us to know, is dated backwards only twenty-eight *Maha-yugas* since. At a much later period the place was under the charge of fourteen persons; the names of some of whom, with their panegyrics, are stated. The management downwards is mentioned; with the number of years during which each manager held authority.

Remark.—The document is in verse, with a very large proportion of Sanscrit words. It is very greatly injured, being eaten away at the edges, and to a considerable extent within the pages, so as to destroy the connexion of the sense; and, on that account, a successful, or connected, restoration of the writing is impracticable. The loss is perhaps not of much consequence. From the titular name of *jiyar*, I recognize this line of managers to be the antagonists of the *Anuranga* line before adverted to, in a preceding statement. See 3rd Report.

There is pasted into the book, and not properly belonging to it, six pages octavo size, of defective Tamil writing, relating to the *Cattata-jati*, and *Congala-jati*, two very rude kinds of savages, who live in the mountains near *Collan-kotai*, and *Cunnapatti*; their modes of life, customs, kind of religion, and similar matters. The want of completeness, in these pages, is to be regretted. Several years since I was apprized of the existence of such a people, in the mountains of the Dindigul district, scarcely raised above animal existence. From other papers, we find remnants of them, in various low stages of civilization, scattered over the peninsula; usually in mountain retreats. Having already, more than once, adverted to the conclusions indicated by the extensive existence of such rude tribes, I need not add more, in this place; except the hope of finding some connected account of these *Cattatas* and *Congalas* elsewhere in the collection.

Section 2. History of *Chengi* kings in the *Dravida* country.

This paper which is promised in the table of contents, appears to be wanting. Either the foregoing document may have been erroneously so designated, or else the paper in question may have been mislaid, and those loose leaves pasted into the book, in its room.

Section 3. Account of the eighteen *Chola-rajas*, &c.

The writer professes to extract from the *Bhavishotriya-puranam*, and makes *Parvati* to enquire of *Siva* at *Cailasa*, concerning the place where beatification may be obtained. *Siva* then is made to narrate what follows.—In the wilderness there was a man, and his wife, of the *Cunumbi* tribe, to whom *Siva* appeared; and they asked him permission

to become rulers of the country. Their request was accorded ; on condition of building a great many *Saiva* temples. The said man ruled ninety years ; and specially distinguished himself by killing *Surasuran*, who had greatly molested the peaceful inhabitants of the country. From this circumstance, his power would appear to originate. He transmitted his rule to his descendants. [Here unhappily a chasm in the manuscript occurs]. Mention of *Kulottunga Chola ;* and of *Siva-linga-Chola*, afflicted with leprosy ; and of other transactions. The entire period of the *Chola* rule was 1159 years. The account was written at Tanjore in the *Crodhana* cycle year by *Vencoji-agoja*, who states in the conclusion, that if the learned shall discover in his production any mistakes, or errors, they are requested to extend to these their indulgence, and pardon.

Remark.—On the document is an English endorsement as follows: "Account of 16 *Chola rajas*, procured at *Capistalum*, in which three pages are lost." The apology of the author, at the close, must, be weighed ; for it implies his own consciousness of possible errors, or deficiencies. It is, however, to be noted that the passage about the killing *Surasuran* illustrates a section of the *Sevendhi st'hala-puranam*, wherein the first founder of *Uriyur*, and Trichinopoly, is termed *Sura-vathittan*, or "the slayer of *Sura* ;" and is therein described as the first ruler. The term of 1159 years, for the *Chola* dynasty, is too great: divided among 18 it would give about 65 years to each ; and we otherwise know the term to be too great. As regards the *Cunumbi* tribe, I understand that *Cunumbi* is a common Mahratti term to express a tribe, or caste, which is not of *Hindu* extraction.

This document besides being incomplete, wanting a leaf in the midst, and some others at the end, is also greatly damaged, by insects eating away portions near the outer margin. It is only not quite so far gone, as the first section in the book ; and a complete, or connected, restoration of what remains of the document is not practicable. Nevertheless as all versions of the *Chola* dynasty, are, desirable ; as this document throws a ray of light on the *St'hala-purana* of Trichinopoly ; and is needful to support, on reference, the abstract herein given ; I have had its restoration attempted: which, upon the whole, has been successful.

Section 4. Account of the establishment of *Tonda-mandalam.*

According to this paper, there were only four or five huts of *Kirata* people (wild savages) previous to its subjugation by the *Chola* king. He, is

herein said to have been long childless, and at length to have had a legitimate son whom he established in a separate palace. A vision of the god is introduced as appearing to the *Chacraverti* who first ruled the *Tonda-mandalam* (i. e. *Adondai*, name herein not mentioned) directing him to a certain place, whence he was to invite and introduce the *Gó-Brahmans*, and he did so. He went on a pilgrimage to *Sri-sailam;* and died soon after his return.

The document then adverts to *Sri-rangha-yâdava-rayalu*, and after him to *Vira-nárâyana-rayalu*, *Deva-rayalu*, and others, as rulers of great power; the whole being 18 in number (the *Rayer* dynasty). The *Góbùr* people, from the north, are next said to have come, and acquired power. Afterwards the Mahomedans from *Hastiná-puri*, or Delhi, fought with the *Góbùr* people, conquered them, and extended their dominion over the *Darshin*, or south country.

Remark.—This document is complete, and has escaped destruction, by having a large outer margin, partly destroyed, but leaving the writing within only slightly injured. The paper varies, at the outset, from Tamil documents, concerning *Adondai*; but agrees in the general outline. The pilgrimage of *Adondai* to *Sri-Sailam* has not before appeared, in previous documents. The mention of the *Góbùr* people seemed to point to the *Mahrattas;* and, on enquiry, I am told, that there is a class of Mahrattas, at Poonah, who bear that appellation.

Note.—As the document, though now recoverable, would very soon cease to be so: and as it has some value, taken in comparison with other papers, I have had it restored.

Section 5. Chronological account of the former *rajas* with dates, &c.

This document is a collection of matters gathered from the *Purânas*, of the *Vaishnava* kind; but put together very much at random, and making the site of all early transactions to be Ougein, which we otherwise know to have arisen from obscurity, only towards the decline of the *Mâgadha* kingdom. There are, I think, gleanings to be gathered, concerning times subsequent to *Vicramáditya;* but the authority of the document seems to me very low, and the writer, at the close, says he had gathered the materials from old books, to the best of his ability. The writing is very legible; but the paper much injured by insects. On the whole it has seemed expedient to rescue it from destruction, by re-copying it; leaving its measure of value, as an authority, to be adjusted at some other time.

Section 6. Account of *Chola-simha-puram.*

Legend of a shrine, on a hill, named *Gádakáchala;* offering nothing, that I can perceive of consequence.

There is a deficiency in the book; and the correspondence of the papers, with the table of contents, is henceforward doubtful.

Section 7. Account of grants.

Corresponding with this section, as I suppose, is the mention of nine village districts, said to have been made over by the Honourble Company for the support of the fane, adverted to in the preceding article.

Section 8. Account of rajas.

There follows a list of some kings, and afterwards a list of towns; but after sect. 5 the correspondence of papers, with the index of contents is obscure, and doubtful. With the exception of sect. 10, promising "an account of the war of Chengi kings with the Moguls," which is not to be found in the book, I do not perceive any other loss to occasion much regret. Generally speaking, however, it is a pity that the collection has suffered so much injury.

Manuscript book, No. 6—Countermark 872.

Section 1. Account of *Syed-yakub* of *Muttur-Chennapatnam,* in Mysore.

A reference to some Mahomedan affairs 150 years since, in the time of Aurungzebe, or Alemguir, and minor paltry details of inter-marriages, subsequently: the whole entirely worthless.

Section 2. Details of merchandize in the *Ekri-sagur,* district of Bidanur.

Money; weights; measures; provisions; ordinary commodities, &c. without any utility, as regards the present enquiry.

Section 3. Account of agriculture in the district of *Chandra-gudi.*

This, in an agricultural point of view, is a document that might be deemed curious, or interesting; but irrelevant to my object.

Four other sections follow, concerning betel and areca nut gardens, weights, coins, &c. In the English heading, a notice of *Vedars,* or hunters, is mentioned; but is not to be found in the book itself. At

the close the writer states that some things, which he had forwarded, were erroneous; promising to send a better account another day.

Upon the whole, the entire contents of this book No. 6, seem to be destitute of any permanent value, it is therefore left as it was found.

Manuscript book, No. 8—Countermark 874.

(Some sections in the Canarese language).

Section 5. Account of *Chitra-durga* (or Chittledroog) with the genealogy of its feudal chieftains.

Legendary origin, co-eval with the times of *Crishna*, and the five *Pandavas*. Subsequently it was a waste, or wilderness, for 1724 years. In Sal. Sac. 1272 (A D. 1350), *Timma-sava-nayak*, paid homage here. In the time of *Narasinha*, there was war with the *Rayer* of *Vijayanagaram*. A thousand *Jonacas* (here meaning Arabs) were engaged as stipendiaries in the war. There follow details of subsequent chiefs, and their wars. At length a Mahomedan, named Cazim Khan, took the fort. A Mahratta chief drove away the Mahomedan: and, after re-instating the *Hindu* chieftain, returned to Poonah. Various minor details follow, down to the time of Hyder Nayak, who took the fort; together with other places; the doing which brought on a war with the Mahrattas, and an invasion of Seringapatam. In the various affairs, connected with the Mahrattas, mention of the English occurs. The paper comes down to the assault of Seringapatam, by the Mahrattas; and then abruptly breaks off.

Note.—The preceding document as regards the writing, and the material written on, which is very inferior French paper, might be allowed to remain; but several of the leaves are loose and the preservation of the whole, in this state, cannot be depended upon. On the whole therefore I have judged it my duty to have the document restored; seeing that most of the details are historical.

Section 6. Account of Seringapatam.

A legend of the formation of a fane, on the site of the town. *Rama* subsequently visited it, and *Jamadagni*, the *rishi*, resided there; who was much annoyed, by the flooding of the river taking away his hermitage. *Rama* removed the unpleasantness, by commanding the river to continue restricted within certain bounds. *Siva-sancara* was a ruler at this place; concerning whom, and some wars with his neighbours, there are some details. The foundation of *Talcad* is mentioned. The

Peishwa of the Mahrattas drove away the chief of this place, who escaped on horseback, and retreated to the woods. Subsequently the rule of *Srirangha-rayalu* (brother of *Timma-raju* of *Pennaconda*) is stated. The name of *Sriranghan* seems to have originated from him. He went to *Talcad*, and died there. The rule of a lord, without specification of proper name, is adverted to, who founded the *Chamunda* fane. The subsequent dynasty of native kings. The Mahomedan usurpation was set aside by the English; who re-established the former dynasty.

Remark.—The commencement of the document is mere legend; but afterwards there is matter of more value. As the paper on which it is written is loose, and the ink pale, I have had it restored. From the intervention of the Mahrattas, down to the close, there would seem to be matter that might merit translation.

Section 7. List of kings of the *Surya-vamsa.*

The legend of *Sacara-capila muni*, and *Bhagirat'ha*, is given, with a few names of the solar line, for the purpose of connecting therewith the Mahratta dynasty of Poonah. A few names of kings of other, comparatively modern, races are unconnectedly added. The document is brief, and very roughly written, with pale ink. On the whole I have judged it expedient to preserve a fair copy.

Section 8. Legend of the fane at *Harikara* in Mysore.

Narrated by *Isvara*, to *Dherma-raja.* It relates to a special bathing place, in the *Tungabhadra* river; and a legendary tale is connected therewith. The language is partly Mahratti, and partly Sanscrit *slocas*, in the Mahratti character. Both as regards writing, and paper, it is in good preservation.

Section 9. Genealogy of the chieftains of *Yalaha-nàd* in Mysore.

Seven persons, being relatives, emigrated from the *Canchi* district and located themselves in Mysore, in places specified. The foundation of the fane of *Vira-bhadra* in Sal. Sac. 1380, is ascribed to a vision. The chief, ruling over a district yielding ten thousand rupees revenue, went and fought against *Juni-bangalùr*, and took the country. Being troubled in mind, he rode out on horseback for exercise; and, coming to a wild place, saw a hare and dog playing together; induced by which favourable omen, he had a fort built on that place, to which the name o *Bangalùr* was given. He fought with *Sanca-nayak* and took his country. His successor built several fanes. A list of descendants appears. The Mahomedans made an irruption, and captured the country; but re-

established this chief. Some other fluctuations of power are narrated. Marriage relations with Mysore. The usurpation of Hyder. This chief thereupon retreated to *Punganur*.

Remark.—This document seems to be locally of some historical value. It is in good preservation.

Section 10. Account of the fane at *Mallur*, in the Mysore country.

Reference to ascetics, and their hermitages; in the midst of *Curumbar* people. One of the ascetics discovered treasure in the earth, and made known his discovery to a chief, who came and saw it. The result was the building of a fane. At a subsequent period the *Rayers* of *Vijayanagaram* built many other sacred edifices; especially an *agraharam* for Brahmans at *Sringeri*.

Remark.—This paper has a mixture of fact and legend. It is in moderately good preservation.

Section 11. Narrative of *Venasiti*, a *Lingadhari*.

This is merely an account given, by the said person, of his family origin from *Anagundi;* emigration thence to the Mysore country; practice of medicine; support derived from Hyder Ali; and subsequent loss of livelihood. It is contained in two pages, of very rough hand-writing; and is of no value.

Section 12. Account of *Balla-baktapur*.

Reference to an emigration of brothers from *Canchi*, to the neighbourhood of *Talcad*, in fusly 948. Three boxes came down the stream, containing images; and a vision of these gods pointed to hidden treasure, with which a fane, a fort, &c. were constructed. An incursion of Mahomedans, who captured the fort. Intervention of Mahrattas. Affairs of Tippu Sultan. His treaty with the Mahrattas. Details of the war of the English against Tippu; ending in his overthrow, and the re-establishment of the former Mysore sovereignty.

Remark.—A former paper occurred on this same subject; but not quite so full. This document being written on thin China paper, of which the sheets are become loose, and one lost, it seemed expedient to copy out the whole in a more permanent form.

Section 13. Account of the *Carnics* of *Balla-baktapur*.

This statement of revenue districts is connected with the foregoing; and, being in like condition, has been added to the restored copy;

though were it found alone and unconnected, it would not have been deemed of importance.

Section 14. Account of the kings of *Kaladi* metropolis in *Bidanur*, (*hodie* Killudee).

Copy of a record in the hands of a person mentioned. Anciently the country was a wilderness. The founder of the dynasty was a local chief, ruling in a town called *At'hiyar-nagara*, which the ruler at *Anagundi* hearing of, sent for him in Sal. Sal. 1422, (A. D. 1500) and formally installed him, as a feudatory chief. He built a fort in the place where he had before dwelt; and governed for 13 years, and seven months. His son was *Sada-siva-nayak*, who ruled 13 years ; and his son, *Dada-sacapa-nayak*, ruled seven years and one month. In all sixteen descents are specified ; occupying 263 years. Some mention occurs of their proceedings, in reference to their neighbours, and their benefactions to fanes and Brahmans. (The above period would come down to 1763 A. D.). It is added that Hyder Ali, acting under the orders of *Crishna-raja-udiyar*, king of Mysore, about that time captured this fort ; together with others, which are mentioned in the neighbourhood.

So much is contained in one part of the document: another part is to the following purport.

The place was anciently a wilderness. One *Basavapa*, a merchant, laid the foundations of the family; and, together with his wife, was very munificent. They had two sons. A sort of power was exercised by him, and his sons. A vision, in the shape of a Brahman, directed them to a place where a symbol of *Siva* fixed by *Rama*, was to be found. Subsequently a serpent, under a tree, directed them to buried treasure, instructing them to build therewith, a town and residence.

A reference is also made to the foundation of the *Rayer* dynasty : the means of doing which is ascribed to a momentary shower of gold, sent down by *Virupacsha*, a form of *Siva*. By that means the celebrated monasterium of *Sringeri* was founded ; and other munificent donatives were bestowed. The Mahomedans afterwards conquered the country ; and placed therein a descendant of the former family, as their tributary.

Section 15. Account of Seringapatam.

Legendary matter as to the formation of a shrine. Mention of some local chiefs, and periods of their reign ; and statement of their donatives given. Interference of the Peishwa power ; of Hyder Ali ; Tippu Sultan. These matters are intermingled with panegyrics of the rulers, at different periods.

Section 16. Account of *Ráni-raya-gata.*

The situation is about 12 coss westward of *Chitra-durga* (or Chittle-droog) and was the site of a local chieftain's power. Some details of his family, and their proceedings are given ; but the paper is a fragment of only four pages, and what is contained is only of moderate importance.

Note.—The three papers from section 14 to 16 inclusive, are written on strong Europe paper not damaged; with ink only a little faded. It is my intention to attach these to a Canarese document, in like preservation, at the beginning of the book ; and then all the loose papers following will be of no further consequence; having been, with only one slight exception, restored in a permanent form.

Incident at *Anagundi.*

A writing of two pages, on damaged and fragile paper, not noticed in the table of contents prefixed to the book, was found prefixed to section 12. It contains the same narrative as that in MS. book, No. 9 Countermark 875, sec. 2 (Vide 4th Report) but somewhat fuller, and as bringing connected circumstances down to the period of a reference to Madras. It has been re-copied, immediately after the document in section 13. The Mahratti portion of this book has now been abstracted; and, for the greater part of it (as was urgently needed), permanently restored.

Manuscript book, No. 37—Countermark 791.

Ancient record of the *Chacravertis* and *Yadava rajas.*

The contents of this book resemble those of MS. B. No. 45 (Vide 2d Report). It is a distinct statement on the same subject ; that is chiefly the *Yádava* line of princes. It should, I think, be also fully translated. The volume is a thin quarto with very little written on each page. It is well bound, and otherwise in perfect preservation.

D.—SANSCRIT.

Palm-leaf manuscripts.

1. *Silpi-sastram* No. 94—Countermark 256, *Grant'ha* character.

This is a treatise generally on every branch of the art termed *Silpi-sastram.* It refers to the plans, and arrangement, of fanes for idol wor-

ship; to the construction of towns, & included buildings; to the formation of images of every kind, intended for the purposes of homage, or worship. With these matters much of astrology is mingled; as to the configurations of planets; their effects on particular days, and the proper times to be chosen for commencing, and carrying forward, any work: if these directions are not observed, loss and damage will follow. There are also formularies prescribed to be used, on the above several occasions.

This manuscript of 63 palm-leaves is of recent appearance; slightly touched by insects; but, on the whole, in good preservation.

2. *Silpi-sastram*, No. 95—Countermark 257 (*Grant'ha* character). In this manuscript two different works are contained.

1. The first is a little old, in appearance; and treats of the workmanship of images, whether made of earth, of wood, of stone, or brass, &c. Particular directions are given, as to the choice of wood; if that material be employed. Astrological times, and observances, are connected with these formations. The work then proceeds to treat of the formation of towns, and villages; and states the eight kind of substances which are required towards the formation of images, in fixing them aright; these are termed *ashta-bandanam*. This last subject is contained in a single leaf.

2. The other work is of recent appearance; and contains various meditations on the qualities, or attributes, of different ideal deities. These are *Brahma*, *Vishnu*, *Rudra*, *Mahesvara*, *Siva*, *Mahesvari*, *Caumari*, *Varahi*, *Mahendri*, *Chamundi*, *Astra-deva* (a form of *Siva*), *Chocapa*, *Vikenesvara*. These meditations consist of reflections on the visible attributes, hands, arms, weapons, &c., with which the images of those idealities are usually represented; and which have an allegorical meaning, though not usually known, or attended to.

There are further some details of attributes of *Brahm*, or the Supreme; these being properly what are termed perfections, and without visible symbols.

The meditation of *Nandi*, the vehicle of *Siva* and his *Sacti*: of *Maha-Cali-Sacti*; and of *Bhairava*. Meditation concerning the door of the fane; its security; and its porters, or warders; its steps; its bolt. The *mantra* on opening the said door, and similar details:

These matters are curious, and give an idea of the minutiæ connected with idol service, not usually met with, in other kinds of books.

3. *Silpi-sastra* (*Grant'ha* character), No. 96—Countermark 258.

This is a very small book, in twelve half sized palm-leaves; complete, and in good order. Its subject is the observation of the *nacshetra,* and other astrological formula, requisite to be observed, before beginning the architectural construction of fanes, towers, images, cars, and any large buildings. The different aspects of the planets; the rulers of special times, and seasons; their friendship, or enmity: these, and similar things, are all to be carefully observed, and compared, before the commencement of any work; so that bad times may be avoided, and good ones chosen.

Note.—The foregoing three MSS. are entered in the Des. Catal. vol. 1, p. 261 art. I, as Tamil works; but they also seem to have an entry under the head of Sanscrit works in p. 131 and 132.

4. *Silpi-sastra* (Telugu character), No. 114—Countermark 491.

This is a rather old book, and incomplete; both in the middle, and at the end. The contents are multifarious; but all relate to the one leading subject only of the formation of images. These images, whether formed of brass, wood, or clay, have different observations, astrological, and otherwise, connected with them. Certain tokens are given as to the cutting of wood; shewing what ought to be rejected, and what chosen. Different kinds of earth, and of different colours, are to be selected for images of different deities, as most suitable. The baking of earthen images in kilns, and the proper time of taking them out, are described. The whole of the details are too minute to be specified in an abstract. The author's name is *Peddanachari.* The subject is more than a mere matter of curiosity: it is however one on which it is not necessary that I should enlarge.

Note.—This manuscript is entered in Des. Catal. vol. 1, p. 357, art. v, as a Telugu work: and it also appears as Sanscrit, Telugu character, at p. 132, art. vi.

Conclusion.

The fifth section of my general report here finishes.

Madras: *September 30th* 1838.

II.—*Essay on the Language and Literature of the Telugus.—By* CHARLES P. BROWN, ESQ. *of the Madras Civil Service.*

THE morals and happiness of a people must always be primarily affected by the state of literature among them; and when we find a nation possessed, like the Telugus, of an ancient and extensive literature, constantly perused, and therefore constantly acting upon their condition, the nature and extent of that literature becomes a question of interest. For in arguing with one of another nation, we shall always find it profitable to know what has been the education pursued among those whom we perhaps wish to instruct. Happily for the Telugus a strong desire to know English is daily gaining strength among them, though it is hitherto studied not by one in a thousand. But the works honoured among them, as written by their favourite bards, are as likely to last, as those of Shakspeare and Milton among ourselves. An outline of their most popular poems may be useful to the foreigner, as guiding his judgment: often liable to error on account of the crude and partial statements orally given us by Telugus regarding their own literature. It will be perceived that I have been led to form a low opinion of some favourite works, particularly in the philological class: and have pointed out a path which I hope will prove more short and agreeable than that which many learned Bramins may advise.

1. Telugu or Tenugu, also called A'ndhra (and by Musulmans Telinga or Tailinga), is the language of a Hindu nation filling a semi-circle, of which Rajahmundry may be assumed as the centre, while the radius extends to Madras. Trilinga and Trailinga are modern pedantic names unknown to the ancient authors.

2. The Telugu language borrows largely from Sanscrit and, in colloquial use, from Hindustani—yet it is an original tongue, and he that is already acquainted with Sanscrit, with Hindustani, or any other language, may yet find himself unable to understand poetry, correspondence or conversation in Telugu.

3. The alphabet used shews that Telugu originated in the Carnātaca (Cannada or Canarese) language, spoken in the centre of the peninsula: the ancient Telugu princes are spoken of as *Carnataca Doralu*: but in modern days the two languages are as different as Welsh and English. The Telugu alphabet resembles that of no language except Carnataca.

4. All Sanscrit literature in this part of India is preserved in the Telugu character: in which as in the other alphabets of Southern India, Sanscrit is written with perfect ease. Indeed we here rarely meet with any Sanscrit volume in any other character. The pronunciation of San-

scrit among the Telugus corresponds with the purest pronunciation used at Benares.

5. The Telugus frequently advert to the idea that Sanscrit is the mother of their language, just as in older times we used to look upon Latin as the source of English. This notion very naturally arises from their ancient grammars being written in Sanscrit, and constructed on Sanscrit principles. Yet Sanscrit is far from being generally cultivated: perhaps among the educated classes one third of the Telugus can read the vernacular poets: and of that third not one in twenty has ever been instructed in the Sanscrit literature. Indeed Telugu poetry though thickly interspersed with Sanscrit words is *unintelligible* (as is Telugu conversation also), to many a foreigner; as for instance, a Tamil or Canarese Bramin: notwithstanding his command of Sanscrit literature he may remain unable to read or even to pronounce Telugu. Others assert that at least Telugu *poetry* originates in Sanscrit. This is easily disproved. In orthography all the laws of permutation and elision are widely different: and every law of the Telugu prosody is totally dissimilar to Sanscrit, although five or six metres (out of some hundreds) have been imitated from that language.

6. The circle which has been mentioned does not include all those parts of the Indian peninsula where the language is spoken: for the Telugus have emigrated to various parts of Southern India: thus a knowledge of this language will be available in the Tamil districts, and particularly in the neighbourhood of Madras. We find however no signs of emigration into the Telugu districts: the tyranny of the Musulman rulers of Telingana in former days is generally referred to as accounting for this fact.

7. Christianity has hitherto made a scarcely perceptible beginning among the Telugus: the bulk of whom are Hindus, of the two braminical sects called Vaishnavite and Saivite; and of the Jangamas who look upon the others as mere idolators: while they themselves worship the symbol of I'swara suspended in a reliquary on their breasts. These three sects are perhaps equal in numerical strength, if among the Saivites we reckon the Smartas who are a sort of free-thinkers.

8. The Musulmans are widely spread through the country but are in a degraded state; they continue to talk Hindustani, but few can write it; indeed they are so illiterate that their accounts and correspondence generally are in the Telugu writing of a Bramin: they have sunk into a menial condition and their language has disappeared from the records even of Government, excepting a few departments wherein the law requires the Persian character.

9. But under their dominion which lasted about a century and a half Telugu literature fell very low, and has only gradually revived under the British Government. Yet no part of the ancient and favourite volumes has perished, and a great fondness for their popular poems has been in recent days the motive of continual publications that issue from the presses at Madras.

10. When we first read their poems we are led to suppose that the dialect used is entirely different from that we daily speak and write. But a little advance in knowledge will shew us that the polished dialect of Telugu used in the poets deviates no more from the spoken dialect, than the language of Milton, Pope, and Byron differs from the English we speak and write. My attention was first called to this fact from observing, many years ago, that a well educated Telugu, fluent in colloquial English, was wholly unable to read a page of Marmion. Now the Bhascara Satacam, a common school book, written in flowing verse, and easily understood by boys and girls is parallel in style to the writings of Walter Scott, or Sadi in Persian; yet perhaps the reader of this page never met with three Englishmen who had read that easy school book. Let us not then call poetical Telugu difficult merely because we have not studied it.

11. From the harmony of this language some have called it the Italian of India; doubtless in the poems, and in the pronunciation of retired villages, it is very melodious; but like Italian it has many a rough and coarse dialect: and the Telugu used in our courts of justice is a strange jargon in which English and Persian phrases are thickly interspersed, forming a jumble that may be difficult to an Englishman who otherwise may be a good proficient in the language. In another very important respect it resembles Italian: for no part of the language, not even in the oldest poems, has become obsolete. And to a beginner we could not recommend an easier volume than the Prabhu Linga Líla, which is supposed to be about seven hundred years old. Some attribute it to a more remote age: but it certainly was written before the Musulmans invaded the country.

12. The Telugus themselves think that the dialect used in the northern (or what they themselves call the eastern) part of the country, is remarkably elegant; and the worst dialect is that spoken at Madras. A foreigner may be excused for perceiving little difference: it appears to be everywhere equally corrupted with Hindustani and English phrases. Nay some of the modern poets (witness the tale of Bobbili, and the Bhalira Cari Velpa Satacam) are full of foreign words. Indeed the

colloquial Telugu is just as corrupt as English was in 1700 when every speech was interlarded with French or Spanish.

Yet I am far from denying the *utility* of the *Hindustani dialect:* as we may denominate the mixed Telugu. There are many convenient English and Hindustani words in every-day use, which do not admit of *intelligible* translation into Telugu. The number of these doubtless will increase (not unprofitably) in time: I would only deprecate the excessive use of this slipshod jargon.

13. If we wish to learn the language completely, to have any degree of ease in speaking or accuracy in writing, we must devote some time and labour to reading a *few* of the *easiest* and most popular poems.* Indeed common consideration will shew us that foreigners who study a language must of necessity learn it in the poets; because this is the easiest as well as the securest path. What should we think of the English acquirements of a foreigner who could read neither Goldsmith nor Cowper? should we condemn him for wasting his hours, if he devoted himself to studying those authors (though popularity may have rendered them vulgar) who among us have attained classical rank?

14. In the literature of the Andhras three bright æras are generally pointed out: the first, that of Nannaya Bhatta and Bhimana; coeval with the writers of the three earliest Jangama poems. The next (assigned to A. D. 1200) is that of Ticcana Somayaji and about two centuries later was the brightest noon of learning, illuminated by Bhattu Murti and other bards who are emphatically called the "gems." From the want of dates in Telugu literature it is impossible to ascertain precisely the æra at which these writers flourished; but it would seem that their illustrious patron Krishna Rayalu died in the year 1458, of the Christian æra: corresponding with year 1387 of the æra of Salivahana.†

* Such as Vemana, the Saranga Dhara Dwipada, the Vijaya Vilasam and the Aniruddha Charitra, which one will be able to read after perusing a few common trials such as he can borrow from any criminal court. He may then proceed to the Mahabharat. Yet I look upon the Lila as sufficient: it is not more difficult in style than the Lady of the Lake: in sweetness and purity of diction it equals Theocritus: but its popularity among the Jangamas is looked upon with an evil eye by the Vaishnavites and Saivites who hold it heretical. In point of morals it is far purer than the works which they consider sacred, and I know no Telugu book so agreeable or profitable to a beginner. An edition and translation of this will I hope soon be prepared. The Nala Catha Dwipada is also an excellent book for a beginner.

† This date is preserved in the following couplet:—

Araya Sālivahāna sac ābdamul, ADRI GAJ AGNI SOMU lan
Tārana vatsarambuna ni dāgha dinambuna, Chaitra sucla sash
Thī, Ravi vāsarambuna, Nri— simhani Krishnudu chēre swargam. A'
Dwāracan unna Krishn'a yava tara Samāptamu chendu caivad'in·

15. Before proceeding to further details it may be worth while to describe the state of the national taste, among the learned and the less literate. The few Bramins who cultivate Sanscrit learning generally study grammar, a few of the works on divinity, metaphysics, law and logic: also some portion of the poetical and theatrical writers. To read through a poem is thought quite superfluous, and those who assert their complete mastery of the Magha, the Ramayan, and other leading classics, seldom can prove that they have perused more than a few chapters in each.

16. Another class devote their attention to Telugu learning and acquire a good mastery of the Vasu Charitra, Manu Charitra, Vishnu Chittiyam, and other poems of celebrity. Even among these scholars the *grammar* of their language is as little cared for as English grammar is among the English. They talk of their native philologists with enthusiasm; but the celebrated grammar written by Nannaya Bhatta, has, with all his commentators nearly fallen into oblivion: perhaps not twenty men can at the present day be produced throughout Telingana who can prove their acquaintance with it.

17. The pedantry of their treatises on prosody has led to similar disuse. The Siva Andhra is, like its Sanscrit model the Amara Cosha, very widely taught:—about one quarter of the Cosha is taught to nearly every school-boy. He also commits a few moral stanzas to memory, and is taught writing and arithmetic. This usually terminates his education, and hundreds even of clerks in our public offices have but this limited instruction.

18. We often hear the Puranas and the Ramayan spoken of along with the Vedas as being the scriptures of India; but they are very little studied. I may here mention that *only three Vedas exist;* each Bramin's progenitors professed *one* of these three; and no man would even admit the other two into his house; as mutual hatred is the only remaining trace of braminical zeal. The Jangamas alone profess to obey the *Vedas* and *Calpas* (or systems), and even these sectarians have entirely renounced the *ritual* portion of these laws. They reject *all* the puranas and the Ramayan itself, and are therefore held in theological hatred by the Bramins.

In this it is distinctly stated that king Krishna Rayal died in the Salivahana year 1387: the year being denoted in the usual ingenious mode by four words "mountains, elephants, fires and Moon—i. e., seven, eight, three and one, which figures being reversed give the æra. This mode of numerical notation has been fully explained in an essay on the subject, written, if I recollect right, by Mr. Prinsep of Calcutta. The date assigned in the table framed by Colonel Mackenzie (which is printed in the introduction to Mr. Campbell's Telugu Grammar), is six years earlier; or, A. D. 1452.

19. The Ramayan is more generally in vogue than any other sacred legend, and has been repeatedly translated into Telugu. The version written in couplets (dwipada) by Ranga Natha is an especial favourite, and when we see circles of Hindus passing the evening sitting in the moonlight to hear a volume chanted and explained for their amusement, we shall generally find it is this "tale divine." But they irrationally look upon the meaning as very generally superfluous, and think with the Musulman and the Catholic that if they cannot understand a good book, they at least have the merit of reading or listening to it.

20. The version in *stanzas* (padya) bears the name of Bhascara; who was assisted by other poets. The style is very poetical, but being, like the Mahabharat, written in the Sanscrit dialect of Telugu (resembling Johnson's and Parr's Latinized English) is sometimes above the comprehension of common persons: and accordingly I think this version is much more applauded than read. All these versions are greatly abridged from the Sanscrit original.

21. Another abridged version of the Ramayan is written in very flowing Telugu verse by the poetess Molli, who was the daughter of a potter—another called the *Niroshtha* (or, non-labial) Ramayan, is a pedantic composition: a mere feat of ingenuity, and merits little notice. I mention it (as well as several other books in the present pages) to warn the reader of the real value of puerile compositions which among Bramins have attained an undeserved celebrity. In this absurd poem, the very name of the hero (Rama) is excluded because the letter M is labial, and the poet chooses to write without using (p, ph, b, bh, m) a single labial letter.

22. The Rámábhyudaya, another poem on the same popular theme (by Rama Bhadraya) belongs to an early age; it is always spoken of with high applause, but manuscripts of it are rare: in fact I never saw but one copy which I obtained from Vizagapatam. The Uttara Ramayan has been elegantly translated by Canacanti Papa Raz, who also wrote a pleasing poem called the Vishnu Maya Vilasam. The Adhyatma Ramayan again is a separate poem written in an inflated (utpréxa) style, and is little read.

23. The Telugu version of the Mahabharat also enjoys a deserved popularity as the great standard of the language: indeed the verse flows as pure and sweet as that of Pope or Dryden in their happiest translations. In this, it is contrasted with the Bhagavat, the Telugu version of which (like Pitt's version of Virgil), is more faithful but is unpopular, being considered (zabbu) mean or unpoetical in style. The Bharata, if printed in the same manner, would extend to nearly the size

of Shakspeare's plays: being about twice as long as either the Bhagavat or Ramayan.* It is considerably abridged from the Sanscrit original; many hundred verses being often condensed into a paragraph, written in prose: indeed prose is interspersed in all the Telugu legends and poems, but no where so profusely as in the Bharata. The first three parvams† or books were composed by Nannaya Bhatta and his associate Erra Pregada. The remaining fifteen parts are the composition of Ticcana Somayazi: these authors unitedly are emphatically called (Cavi Trayam) the three bards.

24. The text of the Mahabharat has unavoidably been much corrupted, in the course of years: and the Adi Parvam, or first book, being a common school book, has suffered more than the rest. The whole has now been revised and the devious readings found in different manuscripts have been recorded; on this foundation a new edition is now in progress, and the first book is in the press.

In this ancient version of the Mahabharat some episodes are omitted: being too sacred to be translated. These are, the Bhagavat Gita (a portion of the Bhishma Parva or sixth book), the Vishnu Sahasranama, the Bhishma Stava Rajam, and the Anusmriti. The first of these, the Gita, has in later times been translated into Telugu under the usual title Krishna Arjuna Samvadam.

* It contains a little more than 23,000 padyams or stanzas (the prose being reckoned as verse), of four lines in each.

† The eighteen books are in the Telugu version divided into sixty three (asvasa) cantos. The books are never mentioned in *numerical* order, but by certain names: thus the third book of Homer was originally called the Might of Diomede. The eighteen names are 1 Adi Parvam, 2 Sabha P., 3 Aranya P. or Vana P., 4 Virata P., 5 Udyoga P., 6 Bhīshma P., 7 Drona P., 8 Carna P., 9 Salya P., 10 Sauptica P., 11 Stri P. 12 Santi P., 13 Anusāsanīca P., 14 Aswamēdha P., 15 A's'ramavāsa P., 16 Mōsala, 17 Maha Prasthānīca P., and, 18 Swargā rōhana Parvam. To recollect these names it may be useful to have the following rude lines :—

> Adi Sabh Aranyamque Virāt Udyogaque, quinque:
> Bhishmas Dro Car Salyaque Sauptica, (prælia quinque).
> Stri, Saupt atque Anusas; Asv', A'srama (quindecimum fit).
> Mōsala Prasthānīc et Swargam, Bharata complent.

The names of the divisions or books in the Ramayan are denominated *Canda.* Thus *Bala Canda* is the phrase for the first book of the Ramayan. The names may be thus recollected—the seventh being the Uttara Ramayan, or supplement.

> 1 Bālas, 2 Ayōdhya Canda, et 3 Aranyam, 4 Cishkindhāque:
> 5 Sundara, 6 Yuddh' atque 7 Uttara, sunt Rameide septem.

The books of the Bhagavat again are called by numerical names: so that a volume superscribed "Dasamam" would in English phrase be "the tenth book of the Srī Bhagavat:" and "Uttara Dasamam" denotes "the second part" of the same book. I notice these because (like the "Ashtamam") they often occur in lists of Sanscrit libraries, the name "Bhagavat" being omitted.

25. Next in popularity is the Telugu version of the Bhagavat:* of which the tenth book (Dasamam) describing the life of Krishna, is eagerly perused; yet even in this their knowledge is very slight. Two or three favourite legends (as the Rucmini Calyanam and Gajendra Moxam) with the (Jalacrida or Krishna Lila), sports of Krishna with the naiads, are in general use—other parts of the Bhagavat that teach a mysterious and incomprehensible sort of philosophy are likewise popular: but we rarely find any Telugu who pretends to understand what he so devoutly reads.

26. We may here remark that the Telugu translators take liberties (more than poetical) with their originals, for they consider a general outline quite sufficient to form a copy: thus they omit, transpose and insert, whatever they please. In the life of Krishna, not only has the translator (Bammera Potu Raz) amplified the passages regarding love and beauty, but has omitted and transposed, what he pleased. He has even gone further and changed the story in some places, giving statements which are not found in the Sanscrit original. Besides (possibly wishing to conceal these deviations), the Telugu translators in *all* books set aside the numerical order of the Sanscrit, melting down ten or twelve (adhyaya) chapters into one (asvasa) book or canto. Thus it is not easy to trace in the original any passage regarding which comparison may be required.

27. The Padma Puran† has been translated into beautiful Telugu verse by Vennelacanti Surapa Raz: he also translated the Vishnu Puran; wherein the seventh (aswasam) book describing the life of Krishna, certainly has much merit though it repeatedly exhibits passages stolen from the poet who wrote the Telugu Bhagavat, just as that poet evidently had stolen much from the Prabhu Linga Líla.

28. We scarcely need stop to mention the other works of this nature, which are little read; such as the Curma Puran, the Marcandeya Pu-

* The word *Bhagavat* has led to errors: used in various combinations it denotes various volumes. The Bhagavad Gita is a portion, as has now been noticed, of the Mahabharat. The history of Krishna is usually denominated Sri Bhāgavat, to discriminate it from the Dēvī Bhāgavat, a separate and heretical work, wherein Rādha (an apocryphal goddess) is exalted into the supreme power as the Bona Dea. And in its fourth sense the word denotes a comedy, regarding the deeds of Krishna; being founded on the tales recorded in the Sri Bhāgavat. Thus the Gita is on divinity; the next is the legend of Krishna or Apollo: the third is the fable of Radha or Venus, and the fourth is a miscellaneous entertainment.

† Purānam, or chronicle denotes a fable, or poem like Ovid's Metamorphoses: describing the four ages of the world, called Crita, Treta, Dwapara and Cali; or, gold, silver, brazen, and iron.

ran, and the Skanda; wherein the Kasikhand was loosely written in Telugu by Srī Natha, and various other portions are the work of inferior poets.—All these are written in the Sanscrit dialect.

29. The remaining Puranas have not been translated: indeed it will be seen that most of the poets have chosen themes in favour of the Vishnu sect; thus the puranas that honour Siva have fallen into disrepute, and those which inculcate magic are looked upon with abhorrence.

30. Some other books are denominated puranas, which are either heretical, apocryphal, or fictitious. All these are very popular—one is the Canyacā Puran, another the Visvacarma Puran, while the Basava Puran and Mari Basava Puran are ancient, and have for many ages been eagerly read among the Jangamas. In the same class (though they would rather merit the name of poems) are usually placed the Raghava Pándavyam, written by Suranna, and the Jaimini Bharata composed by Chinna Viranna: this book is sometimes called "pancha dabbu" or "mere fiction." It is greatly admired by the learned: the people however care little for poems, however beautiful, as the perusal is mere self gratification, and does not convey that religious merit which is throughout the puranas assigned to such as read their silly and disgusting legends.

31. The two books now named are, like the Puranas, braminical works: but the Basava Puran and others named with it are strongly disliked by the Bramins; nor without reason: for one great end of the pauranica legends is to exalt the Bramins into gods:* and these books deny them that pre-eminence. Every portion indeed of Hindu literature is thoroughly amalgamated with their religion, and the authors of even the most lascivious poems always begin their works with expressions extolling the particular creed to which the poet belongs. Thus we find even a dictionary dedicated to Siva and using his name as the chorus of every memorial stanza: an artifice met by a Vishnavite philologist; who stole the verses and appended the name of his patron idol.

32. We have thus completed an outline of the Legends; and before proceeding to describe the popular Poems, which are very numerous, it will be requisite to give an account of the Philologists: who are the guides of poets, and are guided by the authors already described. This unattractive theme may be rather tedious; but it is essential to the com-

* Philip Skelton, in his *Deism Revealed*, 1751 p. 207 observes "It was self-sufficiency made the devil aspire to independency: he thought himself too wise, too great, and glorious a being, to be any thing less than God. He said 'I will exalt my throne above the stars of God: I will be like the most high.'"

fort of the student: who is often advised by his native tutors (as I was) to study some obscure treatises which ultimately prove quite unprofitable. Indeed so absurd is the native course of tuition that I have known some docile Englishmen who have imprinted on their memories the most abstruse Sanscrit canons of the ancient Telugu grammarians; and yet remained unable to construe a common poem such as many a half educated native reads for amusement. I look back with regret to the period I passed in studying the Telugu treatises on grammar and etymology, being fully convinced that half that time and less than half that labour, had it been devoted to the Telugu classics, would have been much more profitable. The result to which experience led me being diametrically opposed to the opinions held by ordinary native teachers, it is requisite to point out the true value of the critics whom they so highly honour.—Nor is that honour undeserved. I only plead exemption from a fruitless study on behalf of the foreigner.

33. The oldest and most venerated critic (his chief predecessors having perished), is Nannaya Bhatta, already mentioned as the translator of the A'di Parvam: who is believed to have lived in the second century of the Christian æra. This celebrated author compiled a brief grammar of the language, entitled A'ndhra* Sabda Chintamani which is written in Sanscrit verse: just as Wallis composed his grammar of English in Latin, because in discussing one language it is always convenient to make use of another.

34. It would be easy to point out many important subjects which the learned author passes over in silence: and I allude to these deficiencies to caution the English reader against expecting much aid from this obscure though standard work, which native scholars who rarely examine for themselves will declare to be in all respects complete.

35. Bala Sarasvati, the oldest commentator on these dicta, wrote in Telugu; his work if printed would be about the size of Valpy's Latin Grammar. Of course he discusses no subjects beyond those given in his text. Many assert that the commentator was a pupil of the ancient grammarian himself.

36. After translating and closely examining this work some years ago I perceived that it is not a grammar; but a mere essay on disputed points. The principles of elision and permutation of letters are amply discussed: but the verb is summed up in a few obscure verses, and the

* A'ndhra is the Sanscrit name for Telugu, just as Gallia was the Roman name for France. In the Laws of Menu (chap. x. 36), the Andhras (ăndhras, not āndhras) are mentioned as a savage tribe: and perhaps were the aborigines. The absurd name Gentoo, formerly used among the English for Telugu, is now pretty nearly forgotten.

syntax is scarcely noticed. Now in a grammar formed on European principles, the Telugu syntax would fill much more room, than here is given to the entire grammar even including the Telugu commentary. And even in this brief treatise more than half is devoted to questions of etymology, which according to European arrangements ought to be placed not in a grammar but in a dictionary, or in a separate treatise.

37. The next philological work, in point of age, is the Telugu prosody composed by Bhimana (Andhra Chhandam) or rather in his name by his son Mallaya Rēça. This is a pedantic treatise full of magic and mysticism.

38. We may here advert to the Adharvana Carica ; a work which is mentioned by Nannaya Bhatta. Of this work, entitled Vaicriti* Vivecam, only fragments remain which are found scattered through the writings of Ahobala Paudit and other critics. They are so obscure that the most sagacious grammarians of modern days look upon them as unintelligible without the aid of a commentary.

39. Some ages after these critics there lived Appa Cavi ; whose writings, otherwise very valuable, are infected with the pedantry of his day. He undertook to frame a comment† *in metre* (in eight books) on the writings of Nannaya—but his style was voluminous, and he finished little more than five books ; wherein he treated only of etymology and prosody. These two subjects he has entirely exhausted, but unhappily has superadded a farrago of unprofitable rules regarding magic and omens which fill more than half his work.

40. Appa Cavi is the first author who mentions the strange notion that the name "Telugu" is corrupted from "Trilinga."‡ If Nannaya, Ranga Natha, Ticcana Somayāzi, and other leading poets, were ignor-

* Vaicriti signifies *Peculiar* (vicāram) or *secondary:* a phrase used by some philologists for Telugu ; distinguishing it from Sanscrit, or the *perfected* language, and Pracrit or the *uncultivated* dialects.—See Wilson's remarks on the Vayu Puran, in Asiatic Journal, 1834, page 206.

† The title is Andhra Prayoga Ratnacaram, or Ocean of Instances. The various words for "sea" are used in the titles of books just as we use the word system, or view.

‡ I am well aware that the word *Trilinga* occurs in the Amara Cosha, regarding gender, as also in the Bramhottara Khandam chapter xvi : but there it is applied not to language or country, but to the tripundracam, or triple line drawn by Saivites across the forehead. The citation from Adharvana Chari in support of the word Trilinga, as a name of the language, possibly is apocryphal : for this writer preceded Nannaya who does not mention the word Trilinga. In the citation from the Dipica (See Ellis's note in Campbell's Grammar Introduction, page 2, and also page 13) I observe that Trilinga is given as the root of Telugu and Tenugu : but to these is added Telungu : a reading that does not appear in the Dipica.

ant of this pedantic whim (equally unknown even now to the nation at large), surely we are justified in rejecting it as absurd.

41. In etymology Appa Cavi discriminates Telugu words into four classes, called I. Tatsama, II. Tadbhava, III. Desya, IV. Gramya. I omit other refinements: but these four phrases so often occur that they call for remark. I. Tatsama "equivalent" denotes, "altered" from Sanscrit: thus *carmam* an act becomes *carmamu. Sévaca* becomes *Sevacudu*, a servant and *Raja* a king, *Razu*. Thus in English we derive capital from capitalis, poet from poeta, nation from natio, temple from templum, circle from circulus, ration from ratio, tradition from traditio. These of course are distinct from Sanscrit words used in an *unaltered* form, such as cavi a poet, or stri a woman—like doctor, tutor, and so forth in English. II. Tadbhava "proceeding" denotes *much altered*: thus *samudrah*, the sea, becomes *sandram*, yātra, pilgrimage, becomes zātra: thus from the Pracrita word *pavâlo*, coral, is formed pavadam: from canso, bell metal, comes cançu. Thus in English we change ratio into reason, satio into season: traditio into treason and moneta into money. III. Desya, or primitive Telugu words, such as gurràm a horse, cannu an eye, illu a house, and so forth; which like the corresponding English words are primeval and cannot be traced to any root. A subdivision of this class is Anyadesya, or local. Thus the words polati, toyyali, melata, and many other words for woman; rautu a soldier, reddi a farmer, gidda a bullock, muduca old, bittari beauty, bittali naked, and many more; some of which are supposed to be Tamil and others are Canada: just as we consider some of our words English, others Scotch, and others Irish. IV. Gramya, or barbarisms* including all Hindustani and other corruptions.

42. Appa Cavi's work may indeed be valuable as a guide in forming accurate ideas on the themes he discusses. But it seems to have deterred many (at least such is the general belief) from poetical composition: as according to this Aristarchus it is almost impossible to write correctly. But they may observe that he is not infallible: for after defining all that is of good and evil omen to the poet, he has left his own work less than half completed.

43. The next grammarian to be spoken of is Ahobala Pandit, author of the Cavi Siro Bhushanam, a voluminous commentary written in San-

* On this subject the following observation occurs in Rees's Cyclopœdia, under this word. "Barbarism is often charged with great justice on modern writers in the learn- "ed languages: the Latin books of late ages are full of Anglicisms, Gallicisms and the "like.' But what shall we say to those who accuse even Cicero himself of barbarisms "in his own language?" Thus Appa Cavi declares the exordium of the Telugu Naishadham to contain (gramya) barbarisms.

scrit on the *Sutras* of Nannaya. This work is of modern date, written (as the author's descendants inform me), about the middle of the last century. It is very pedantic; strives to deduce every Telugu rule from a distorted Sanscrit rule, and after a verbose preface, on every subject that could be introduced, fails to solve real difficulties. For instance; it is well known that the great stumbling block in Telugu is regarding the classes of words denominated Cala and Druta. On this topic (quite as abstruse as the rule regarding the Greek accents), the author gives up the discussion: merely reiterating what Bala Saraswati had stated, and not even adducing a new instance in proof.

44. The treatises which have been mentioned are generally denominated after their authors. Thus the Appa Caviyam, Ahobala Panditiyam and Nannaya Bhattiyam. Those to be next mentioned have separate titles. All the more ancient of these will be disposed of in a very few words.

45. Indeed none of these books have risen to much celebrity: the Andhra Caumudi is a Telugu grammar, apparently as ancient as the Bhattiyam, but framed wholly on Sanscrit principles; just as the antiquated English grammars were on a Latin mode. There are also several vocabularies, imitated from the Amara Cosha, as has been already noticed; being the Siva Andhram; and its rival the Vishnu Andhram. The A'ndhra Ratnàcaram, the Andhra Bhash Arnavam (now about to be printed), and many more.

46. There are various treatises on Telugu prosody, such as the different *Chhandams* named after Hanumanta, after Marri, and after A'nanda Ranga Raz (also called LAXAN'A CHUDAMAN'I); the Laxan'a Dipica, LAXAN'A RAJIYAM, and several more. All these works and others on etymology have fallen into comparative oblivion: though it is possible a few may merit publication.

47. The last work to be described is one that deserves honourable mention being the Telugu dictionary compiled by Mamadi Vencaya, a learned merchant (comati) of Masulipatam; who died in 1816. This work is arranged alphabetically, in the European method, and every word found *in the ancient lexicons* (*but no more*) is briefly explained in Telugu or Sanscrit. This work will always be of value to those who study the poets. The title is ANDHRA DÍPICA.

48. In one important point the arrangement is defective; and for my own use I was obliged to re-arrange the whole dictionary to remedy this evil. In Telugu the four *initials* of each *varga* or class (K, kh, G, gh; also ch, chh, J, jh: also T, th, D, dh, and P, ph, B, bh.) are changeable: so that many thousand Telugu words (Sanscrit words are

independant of this peculiarity) change the initial T into D, or P into B &c. Thus we meet with the word zoccam, elegance : and are told to search for it under çoccam : thus gá-jeyuta, to accomplish, must be sought under *ca* not gá : indeed a learned native assistant when asked will often reply that *either* initial is good. After some years I perceived that the evil lay in separating letters that were originally one. Accordingly I caused the new arrangement to be made, which at once remedied the evil : thus each of these sets of letters (k, kh, g, gh, for instance), now forms but one alphabet, just as I and J used to be mingled in the English dictionaries. The approbation it has received from sound scholars leads me to believe that the new arrangement is such as necessity called for. It certainly much facilitates the task of finding an article when required. The principle of *softening* initial consonants is found in Welsh, in Gaelic, in Irish, and in other languages of the Celtic school. Thus words beginning with K, ch, T and P may substitute G, J, D, and B. It is curious to trace the same principle in languages so far removed from each other.

49. Besides, Mamadi Vencaya has diminished the utility of his lexicon by giving into some foolish rules of spelling that are very dear to the dulness of modern days. If these doctrines be right, then *all the ancient manuscripts* of all the poets are wrong. I will briefly mention these rules, that the reader may understand their true value, when they are urged on his attention by Telugu pedants.

50. The letter R has two forms, the Telugu form and the Canarese form : which differ from one another in shape, but not perceptibly in sound ; just as the small " r" in the obsolete Saxon alphabet differs in shape from the Roman letter r which we now use. Those few Telugu poets who wrote in the earliest ages used one form in some words and the other form in other words : stating that these two could not rhyme together. In sound, perhaps one differed from the other in old days, just as much as the aspirated and unaspirated *Rho* did in Greek. Or like the two sounds of R used in Hindustani. Yet even in those days usage evidently was various and it is clear that the Jangama bards coeval with Nannaya admitted no such canon. But in the third or golden age of Telugu literature (before Appa Cavi appeared), this distinction had perished : and (unless in the commentators) we find no traces of it in the Vasu Charitra, the Pārujāt Apaharanam, the Vishnu Chittiyam, the Vijaya Vilāsam, or the Manu Charitra : names which in Telugu literature rival the poems of Pope and Dryden, Goldsmith and Scott among ourselves. Now if we determine that words which the Saxons wrote with their peculiar R cannot in English rhyme to similar words bor-

rowed from Latin, we may easily frame a rule according to which Pope and Dryden should be proved illiterate. If we then proceeded to stuff the English dictionary ad libitum with the Saxon R surely we should render it unintelligible to the common reader; and this is precisely what Appa Cavi has done. Mamadi Vencaya has without good reason bowed to his decision. As I have already hinted, this rule deviates from the spelling used in all the existing manuscripts of all the poets. It cannot then deserve to be revived after falling into merited oblivion. Among the Canarese it is still in use, but among the Telugus it is so utterly forgotten that its shape is now given to the capital vowel U, and we shall rarely meet with a Telugu who can read words written with R in this obsolete form; which is called *bandi repha.*

51. This forgotten letter has not appeared in any modern editions of the Telugu poets, though a pains-taking Telugu news-paper editor occasionally treats his readers to words written in the obsolete mode.

52. A minor inconvenience of the Andhra Dipica (likewise caused by Appa Cavi's refined rules) arises from the use of the semicircle, denoting the (arddh ānuswāram) nasal sound. Thus the words *tōdēlu*, a wolf, *ēnugu* an elephant, *vādu* he, *Sivudu*, *Bramhanudu*, &c., are spelt tondelu, enungu, vandu, Sivundu, Bramhanundu, and so forth. Now this spelling is peculiar to poems, wherein the character used is the *circle,* not the semicircle : and in modern days, this semi-nasal has been disused. In common talking we shall often find illiterate Telugus preserve the antique nasal twang, just as the rustic English often do. But the educated classes have laid aside this disagreeable sound : and pedants blame them for this innovation.

53. Māmadi Vencaya, likewise uses the marks 1 and 2 to denote the hard and soft sounds of cha and Ja (i. e. ça and za) but this is quite superfluous : as all who have learnt the mode of reading the Telugu alphabet are already independent of these signs.

54. I have given these details regarding Mamadi Vencaya's lexicon out of a respect for the talents and diligence of the writer : which are peculiarly honourable to a man who was by birth and situation a shopkeeper at Masulipatam. He previously compiled a valuable Sanscrit and Telugu lexicon called the Sabd Artha Calpa Taru, which has been used in the admirable Sanscrit dictionary by professor Wilson. But we shall always find this unprinted dictionary useful as giving Telugu synonymes for Sanscrit expressions.

55. Its arrangement, imitated from the Médini Cōsha, is inconvenient to the beginner. The words are classed according to their *final* syllable :* then according to the *number* of syllables, and lastly according to

* As is done in Hoogeveen's Greek lexicon, and in the Arabian lexicon named Kamus.

the initial : so in looking for " Vaitaliya" we must turn to letter Y, under which are the successive classes containing words of one, two, three, and four syllables. This last being traced, the rest of the arrangement is alphabetical ; on the European mode.

56. The latest philological work compiled in Telugu was the unfinished treatise written by Patahbi Ramaya Sastri : an account of which is given in the Introduction to Mr. Campbell's grammar. It evidently is a work of curiosity and of value to those who take an interest in etymology and the affiliation of languages ; but is of no utility to the foreigner.

57. Before proceeding to speak of the poets it is requisite to consider some other imbecilities in the modern style of " fine writing," which are conspicuous in many Telugu publications particularly in translations from English books, and in the Telugu newspapers. The ancient grammarians having defined the principles of elision and permutation, *which of course were intended for* POETICAL USAGE ALONE, these laws have been transferred into the *colloquial style of business*, and of education. If we can imagine a common newspaper, printed in modern vulgar Greek using the *ampullas et sesquipedalia verba* the oratorical elegancies of Pindar, or Æschylus it will convey some idea of an absurdity which it is hard to describe intelligibly to the English reader.

58. Indeed this folly has gone to an extent hardly credible ; a version of part of the Bible itself has been prepared by a learned Bramin in a stilted style, spelt in a manner unintelligible to the common reader, and justly condemned by good scholars. Happily it has not as yet been printed ; and as it possesses real merit, it should be prepared for publication by being transcribed into the *intelligible* dialect. This can be done by any sensible copyist, who will transmute its whimsical spelling into the plain Telugu used in business or in common correspondence. Unless this precaution is taken the version may indeed be published but will never be read.

59. The remedy for such delusions happily is within the reach of every one. Let the foreigner study the language in common criminal trials (civil trials being more intricate) and ordinary letters : he will soon be able to detect and shun the nonsensical refinements which are now so popular.

60. Let it not be imagined that I am peculiar in my view of these caprices. That distinguished scholar, the late Head Telugu Examiner in the College, Gurumurti Sastri, who died about three years ago, fully concurred in the opinions given in the present essay. I mention his name because his talents, learning and good sense always entitled his judgment to respect : but I could easily name other sound authorities

now living; as for instance my friends the pandits in the Court of Sudr Udalut. They are Telugu Bramins and during more than fifteen years have given me much literary assistance. Well aware that my statements will incur the reproaches of many a half educated Sastri and self-styled pandit, I am happy in mentioning men of such well known talents (I might easily adduce many others also) as disapproving these follies.

61. Again:—It is acknowledged that the regulations and acts of Government are very ably translated into Telugu—yet they are wholly free from all these elegancies of style (bandi-repha, ardha-bindu, sandi, and saral-adesam) which poor pretenders to learning timidly cultivate. If such pedants are right, then the laws of the Government are written in bad Telugu; because, according to their notions, nothing can be correct which is easy to read.

62. When it is considered that the reader's progress is greatly impeded by the refinements I have described I shall appear justified in giving so much space to remarks which cannot be generally interesting.

On re-perusing the present essay I observe with much regret how little advantage we can derive from the historians (so to call them) and popular grammarians. With a few rare exceptions in the former class, these are *all* unavailable to the Englishman. But if he wishes to read the language in its perfection, to know it as the natives know it, he must resort to the *Musarum chorus*, the "Cavyamul" or favourite bards: of whose popular works I propose to give a summary in the next essay.

In that paper some selections will be given from poets already named: but in the present pages I have endeavoured to compress all that preliminary information which the reader will most frequently require: what remains, may be of slighter moment.

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III.—*Catalogue of the Birds of the Peninsula of India, arranged according to the modern system of Classification; with brief Notes on their Habits and Geographical distribution, and description of new, doubtful and imperfectly described Species.—By* T. C. Jerdon, *Assistant Surgeon, 2d Madras Light Cavalry.*

Until a very few years ago we did not possess a single collective account of the birds of this vast country. In 1831 a Catalogue of birds collected on the banks of the Ganges and the Vindhian range of mountains by Major Franklin, was published in that useful compendium the Proceedings of the Zoological Society of London. This comprised 156 species, of which more than 20 were described for the first time, many of them very common birds, as *Otus Bengalensis, Thimalia Chataræa, Alauda Gulgula, Mirafra phœnicura, &c. &c.* Notwithstanding the difference of latitude in which these were collected, there are only 6 or 7 which I have not met with in Southern India, which shews the very great similarity of the ornithology of this country throughout. In 1832 a catalogue of birds collected by Colonel Sykes in the Bombay presidency was published, in the same work as the last. In this are enumerated 226 species (I omit the domestic birds included), of which above 40 are described for the first time, many of them common and abundant birds. This catalogue is undoubtedly the most valuable account of the birds of India published, and contains, in addition to the bare catalogue and descriptions, many highly interesting observations on the habits, food and structure of many of the species there mentioned. Of those enumerated by Colonel Sykes there are about 9 or 10 which I have not yet observed, most of which are probably peculiar to the more northern portion of the range of ghauts and neighbouring table-land. During the short period I have been in this country I have traversed a considerable portion of the Madras presidency, both on the eastern and western sides of the Peninsula, and have been fortunate enough to add a considerable number of species to the Indian Fauna, a few of which are apparently new to science or but imperfectly known. The total number of my catalogue is nearly 390; which, however includes those 10 of Sykes, not hitherto obtained by me, and nearly as many more observed by Walter Elliot, Esq.,* Madras Civil Service, who has kindly placed his valuable notes on the birds procured by him at my disposal; by which, in addition to the new species added, I have been enabled to elucidate several doubtful points, to add some most

* Mr. Elliot saw this catalogue previous to its submission to press; and some remarks of his will be found as foot-notes, bearing his initials, throughout the paper.—Editor.

interesting information on various birds, and to give the correct native names of most of the species enumerated by him.

I must here say a few words in explanation of the limits of the districts alluded to in the following catalogue as the "habitat" of the different birds. With reference then to physical features and the geographical distribution of the birds, I divide the Peninsula into four great districts or divisions—1st, The Northern Circars—2d, The Carnatic—3d, The Western Coast—4th, The great central table-land.

1st. *The Northern Circars.*—This district comprises a narrow tract of land extending (between 16° and 20° N. lat.) from the sea coast on the eastern side of the Peninsula to the eastern ghauts by which it is separated from the great table-land. It is a tolerably level district, with occasional spurs from the ghauts approaching the sea coast; has little or no natural wood, except towards the ghauts, the sides of which are in some places clad with thick jungle of bamboos and forest trees, and, with the exception of large groves of palm trees, has but little wood throughout it. This district is perhaps hardly separable from the Carnatic by its physical features alone, but the difference of latitude, causing a change in climate and a greater variation of temperature, perhaps authorize its separation, which is partly confirmed by the fact of one or two birds common in the one, being rare or not met with in the other district.

2d. *Carnatic.*—Under this head is included the whole of the country lying south of the Northern Circars, along the coast as far as Cape Comorin, and bounded on the west by the range of eastern ghauts, except in the Coimbatoor district, where the eastern as well as western range of ghauts is broken. It has but little natural wood, except partially on the sides of the ghauts and occasionally at their bottom; is a level and low lying country, with occasional isolated rocky hills, and low ranges, sometimes bare, in other places clad with low brushwood. In the immediate neighbourhood of the large towns and villages there are large topes, and many of the roads are lined with magnificent avenues of banian and other large trees.

3d. *Western Coast.*—This includes Travancore, Cochin, and Malabar, and comprises a strip of land of various width lying between the sea on the western side of India, and the range of western ghauts which it includes. It is mostly undulating or hilly, and, unlike the other three districts, is almost every where covered with jungle of every description, from low bushes to the most lofty forest trees: most of the roads here too are lined with splendid avenues of banian, cashew and various other fine trees. The climate is moist and comparatively cool.

The Wynaad district, and generally the wooded parts bordering the summit of the ghauts, may be also included in this, which they resemble in climate and productions, though more correctly they belong to the next division.

4th. *The Great Central Table Land.*—This includes Mysore, the Baramahl, the Ceded Districts (Bellary and Cuddapah), the kingdoms of Berar and Hyderabad, the Southern Mahratta country, and the Deccan (the four so called Bombay Collectorates, Colonel Sykes's district). The whole of these countries, with the exception of the parts immediately bordering on the ghauts, consists of a vast undulating plain of various height, almost entirely devoid of trees, except close to villages and towns, and with but little low jungle even. Here and there low ranges of hills appear, and isolated rocks, or droogs, mostly bare, others covered with low brushwood. Towards the north and west large steps occur, and the country is more broken by hills and ravines than in the southern part. Here too we have greater abundance of low jungle, and even stunted trees, and in many of the ravines wood abounds. Considerable tracts of long grass, or 'rumnahs' occur here and there, especially towards the more northern portion. The whole of this district was formerly named the Deccan, and accordingly in the following catalogue I shall indiscriminately mention it as the Deccan or table-land, except when a bird is peculiar to, or more abundant in, one portion of it than another. The Neilgherries are justly entitled perhaps to a separate mention, as well from their climate as their productions, and probably approaching them in these respects are the Pulny and Animally hills, both to the southward.

The classification I have adopted is that of Swainson (as recently given in his most admirable treatise on birds*, which I have ever found most natural as regards the habits of the Indian birds he has classed together, especially the *Brachypodinæ* and *Crateropodinæ*. Among other instances, where, by his acumen and discrimination, he has rightly located, from their external character alone, birds before his time most improperly and unnaturally placed, I may instance *Thamnobia* (an *Ixos* of former authors!) and *Gryllivora* among the *Stone-chats; Hypsepetes* among the *Bulbuls; Pomatorhinus* among the *Babblers; Coracias* in the *Fissirostres*, and *Phœnicopterus* among the *Anatinæ;* and I am happy to be able by personal observation of their

* *The Natural History and Classification of Birds.—By* William Swainson, vols. 1st and 2d—*Lardner's Cabinet Cyclopedia.*

habits to confirm his views as to their natural situation. If in some parts his classification is deficient, it is from want of material alone, as in the *Raptores* generally, and the *Strigidæ* in particular. Here, however, fortunately important aid has been derived from another quarter, viz. from the accomplished Mr. Hodgson, Resident at the Court of Nepaul—who, in the papers he has published in the Indian periodicals, has shewn that he combines the greatest talent for minute observation of peculiarities of habits and manners with most critical skill in the more abstruse and scientific art of classifying, to whom we may hereafter confidently look for filling up many of the outlines and deficiences of Swainson's system, and whose promised work on the Fauna of Nepaul is so anxiously expected.*

It only requires for me to add that in the following catalogue the length is reckoned in all cases from the tip of the bill, and when the length of a toe is mentioned, it includes the claw also, unless the contrary is particularly mentioned.

The following abbreviations are used in reference to the native names :—

H. Hindustani.
Can. Canarese.
Mah. Mahratta.
Mal. Malyalum.

Order I. RAPTORES.

Family VULTURIDÆ.

Genus VULTUR.—Auct. *Vulture.*

The species of this genus may be speedily collected on exposing a carcass on the open plain, though none were previously in sight. They are readily distinguished in the air by their manner of soaring with wings turned obliquely upwards.

1. *V. Indicus*, Lath.—Temm. P. C. 26.—*Geedh*, H.—*Mahah-Dhoh* of Mahrattas. Large brown Vulture.

2. *V. Bengalensis.*—Gmel.—Gray and Hardwicke Ill. Ind. Zool.—*V. Cinereus*, Temm. var.—V. *leuconotos*, Gray and Hardw.—Old bird ?—*Geedh*, H.—Small brown Vulture.

3. *V. Pondicerianus, Lath—Rung Geedh*, H.—Black Vulture.

* See *Literary and Scientific Intelligence*, at the end of this Journal.—Editor.

Colonel Sykes correctly says of this bird 'mostly solitary.' Two or three may however frequently be found hunting together over high rocky and bushy hills. On the Neilgherries I have seen flocks of twenty or thirty of what I conceived to be this species hunting in company over the hills, occasionally reconnoitering some spot where something unusual attracted their attention, and circling over it for some time—and then pursuing their onward course. As I did not procure a specimen, this may be a distinct species, perhaps the allied one 'auricularis' or social vulture, which is stated in some works to occur in India.

Genus NEOPHRON, Sav.

4. *N. Percnopterus*, Sav.—*Kul-moorgh*, H.—Dung bird—Scavenger.—White Vulture.

Very common; most numerous in cantonments and large villages, where it is of the greatest utility. As Colonel Sykes remarks, 'they are most efficient scavengers.'

Family FALCONIDÆ.

Sub Family AQUILINÆ.—*Eagles.*

Genus PANDION, Sav.—*Fish-Eagle, or Fish-Hawk.*

5. *P. Haliæetus*, Sav.—*A. Haliæetus*, L.—*Mucharera*, H.—Osprey.

This bird appears to have been hitherto unrecorded as Indian, for in Yarrell's 'British Birds' and Sir W. Jardine's later work in the 'Naturalist's Library' there is no mention of its occurrence here, though its geographical distribution is particularly recorded. I have seen it on the Trichoor Lake, and near Ponany on the west coast, and a short time ago obtained a specimen as far inland as Jaulnah. My specimens correspond pretty exactly with the description of British ones. The pectoral band was distinct on all—Irides bright yellow.

6. *P. lineatus* ?—*Hal. lineatus*, Gray ?—*Pand. Indicus*, Hodgs. ?

I several times observed a large Fishing Eagle on the Chilka lake, which at a short distance appeared of an uniform greyish green colour.

This may have been the species figured in Gray and Hardwicke's Illustrations, but I did not succeed in obtaining a specimen. I frequently saw it plunge completely under water (as the Osprey) and bear off a large fish in its talons to some neighbouring eminence.

SUB GENUS HALIÆËTUS.—*Sea Eagle.*

7. *H. blagrus*, Less.—*F. blagrus*, Shaw.—*F. leucogaster*, Lath.—*Aigle Oceanique*, Temm. Pl. Col. 49.—*Grey backed Sea Eagle.*

The descriptions of this bird which I possess, are not very satisfactory, but I have no doubt it is the bird named as above in Lesson and Griffith's Cuvier. It is certainly not very common. I first observed it sailing over the Chilka lake, at a considerable elevation, from whence it made an unsuccessful swoop at a duck I shot. I again saw it at Ponany, sitting sluggishly on the sandy beach close to the sea, and again, near Calicut, saw a pair skimming very closely over some low bushy ground. The stomach of the specimen I procured was empty. The fishermen at Ponany assert that it lives chiefly on fish, and frequently carries one off from their boats or nets. It doubtless, however, varies its food according to opportunity, and like its European analogue the *H. albicilla*, nothing may come amiss to it. Its flight at first after rising is heavy, but when once fairly on the wing easy and powerful, rising to a great height by large and graceful sweeps. It agrees exactly with the characters of *Haliæetus* as lately defined by Yarrell and Hodgson. This sub-genus, though not admitted by Swainson, appears necessary to join *Aquila* and *Pandion*, and may perhaps be marked as a sub-genus of the latter, leaning towards it by its roughish soles, length of wings, which reach beyond the tail, and festooned upper mandible. I add a brief description of my specimen. Back and wings light blueish grey, occasionally tinted with brownish ash. Quills and tail brownish black, the latter broadly margined with white—rest of the body pure white; feathers of head and neck acuminated; bill, horn colour; cere, yellowish; legs, dirty yellowish-white; irides, brownish yellow. Length about 30 inches, wing to end of 3d quill 24 inches, tail 10 inches, tarsus 3½, middle toe and claw 4.

8. *H. Icthyœtus*, Horsf.

I have not myself observed this species of marine Eagle, but it was obtained by Mr. Elliot, in the Southern Mahratta country. It is said to live upon fish, but not solely: in one specimen there was the

skin of a bird. Its talons are rounded like those of the Osprey. Bill strongly toothed; it and cere black; legs dirty whitish; irides, brown. Length of a male bird 27½ inch, tarsus 3½ inch.

Genus AQUILA.—*Eagle.*

9. *A. Chrysætos—Golden Eagle.—Joomiz* or *Joombiz*, H.

I several times observed birds of this species, both single and in pairs, in the more northern parts of the Deccan, many of which shewed the white mark at the base of the tail, which gained for it the name of ringtailed Eagle, and I procured a specimen near the Godavery river. I frequently also see them near Jaulnah, even close to the cantonment, and they are occasionally seen to pursue and strike at hares, florikin and other game started by sportsmen. This Eagle may generally be seen seated on the ground, or on a stone on the rocky hills, in the neighbourhood of Jaulnah, whence, after the sun has been up for some time, it takes a flight in search of prey, at no great elevation, hunting slowly over the bushy valleys and ravines, and also over the cultivated ground occasionally, after which if unsucessful in its search, it reseats itself on a stone on some eminence, or even perches on a neighbouring tree, where it patiently waits till some quarry is raised or viewed, or till hunger again prompts it to take a flight. I obtained a specimen alive some time ago, it having been slightly wounded, and it is now in my possession, in perfect health. It feeds most greedily on raw meat, preferring it to birds or animals either dead or living. It is very sluggish and inactive even when urged by hunger. It generally drinks a gulp or two of water after eating. The only cry I have heard it utter is a harsh croaking. I shall now for the sake of comparison add a brief description of this bird, which exactly corresponds in plumage with the other specimen I shot.

Upper part of head and neck, pale buff cream colour, some of the feathers on the forehead broadly streaked with dark brown, and a few other detached ones entirely of an orange buff colour. Quills nearly black, tail of a dark hoary grey, barred and clouded with blackish, and broadly terminated by the same colour. Under tail coverts pale brownish white, all the rest of the body of a rich glossy dark brown, tinged on spots with lighter brown; on the scapulars, there are one or two white feathers, and one or two more edged by the same colour. Cere and legs, yellow, with a tinge of green. Irides, brownish yellow. Length about 3 feet, wings to end of 4th quill 26 inches, tail 13, tarsus about 4, middle toe and claw 3-$\frac{6}{10}$ths. On the internal and middle toe there are 4 large scales each, and the division between the large scales and the smaller ones, is not nearly so marked as is represented in the woodcut in

Yarrell's British Birds; this, however, may depend on age. Another slight difference from the description of the European bird is, that the nostrils are almost quite transverse, and do not point so much backward as is represented both in plates and descriptions.

10.—*A. bifasciata*, Gray & Hardw.—*Double banded-Eagle.*

I have only seen this Eagle two or three times close to Jaulnah, but have hitherto failed to procure a specimen. One was lately seen to strike at a florikin.

11.—*A. Vindhiana*, Frankl.—*A. punctata*, Gray ?—*A. fusca*, Gray ?—*A. fulvescens*, Gray ?—*Wokhab*, H.—*Lesser Indian Eagle.—Mottled or variable Eagle.*

I possess a living specimen of an Eagle which corresponds as nearly as possible with the description by Franklin of *A. Vindhiana* in his catalogue; and I also possess specimens which have so great a resemblance to the three Eagles, figured as distinct in Gray and Hardwicke's *Illustrations of Indian Zoology*, as to warrant a conjecture that they are one and the same species. In this conjecture I am strengthened by finding that such is also the opinion of Mr. Elliot.

I shall here briefly describe some of my specimens to show their similarity:—1st, one resembling *A. fulvescens*, Gray, which I consider as the youngest state of this Eagle. Head and neck of a fulvous orange colour. Quills and greater coverts blackish brown, the latter edged with pale greyish. Tail greyish brown, much barred with blackish. Rest of the body of a light brownish grey, with a strong tinge of fulvous yellow throughout, the feathers of the lower parts streaked in the centre with darkish brown.

A second specimen has nearly cast off the whole of the light fulvous colour, which only appears on the feathers of the abdomen and under tail coverts, a feather sometimes being dark brown on one side of the shaft, and fulvous on the other, but specks and streaks of this yellow appear in many parts, especially on the head, back of neck, and breast, as in *A. punctata*.

A third specimen is nearly of an uniform brown colour. In the living bird, the head, throat and breast are of a very deep brown, almost black; and this, though an old bird, is yet evidently not in its perfect plumage. This bird varies in length from 25 (the male) to 28 or even 29 (the

fem.). In a female 28 inches long, the wings are 21 inches. Expansion of do. about 5 feet. Tail 11 inches. Tarsus 3 ; mid toe and claw 3. Cere deep yellow. Feet a little paler do. Irides hazel brown. The *Wokhab* is the most abundant Eagle in India. I have seen it both in the Carnatic, though more rarely, and on the table-land, where it is tolerably common. In the Carnatic it chiefly frequents hilly districts clad with low jungle. In the Deccan it frequents, by preference, the cultivated lands near villages. Till an hour or two after sunrise, it may be seen seated on the top of some tree, after which it sallies forth, sailing about at a moderate height in general (though it varies much in this respect) over the fields, valleys, and ravines, with a slow and circling flight, or in company with the kites, like which it is ever on the look out;hovers over villages,towns and cantonments. They prey upon hares, (as I have ascertained, in one or two instances, from the contents of their stomach,) and other game ; also rats, lizards, snakes and insects ; occasionally also pounce on an unwary bird, and in fact feed upon almost any kind of food, living or dead, which, however, they obtain perhaps less by their own industry than by robbing other birds, kites, falcons, and other birds of prey. From Mr. Elliot's notes, I extract the following—"The *Wokhab* is very troublesome in hawking after the sun becomes hot, mistaking the jesses for some kind of prey and pouncing on the falcon to seize it. I have once or twice nearly lost *Shaheens* in consequence, they flying to great distances from fear of the *Wokhab*." The one I possess alive, is not very particular as to its food. It frequently snatches morsels from the golden Eagle kept with it, to which the latter in general quietly submits ; is a very noisy bird, frequently uttering its shrill scream, and has a great share of curiosity, walking up to, and carefully and thoroughly examining every new comer I place in the same apartment. It is apparently a very easily domesticated bird, and perhaps might be taught to hunt hares, &c.*

11 Aq. ? Neilgherry Eagle.

On the summit of the Neilgherries there is very frequently seen a black Eagle, larger than the *Wokhab*, but of which I was unable to procure a specimen. I have heard it is also often met with in Coorg.

*It is considered too slow and heavy for purposes of Falconry. I differ only with Mr. Jerdon in thinking the dark species (*Aq. fusca*, Gray), to be the young bird, which grows lighter by age, and becomes *A. flavescens* when old.—W. E.

Genus NISAETUS, Hodgson.—*Hawk-eagle.*

12.—*N. niveus ?*—*F. niveus*, Temm. P. C.—127 ?—*White bellied Hawk Eagle.*—*Mhorungah* or *Mhorungee*, H.

I presume, from the meagre descriptions I possess, that my specimen is identical with the *Javanese* bird, named as above by M. Temminck. It appears to belong to the new genus,which Mr. Hodgson has, I think, most justly separated and named very happily.* This species is not crested, but otherwise agrees exactly with the characters given, which are (among others) short high bill, short wings, rather long but nervous tarsus and immense feet and claws. M. Lesson, I see, has ranged this bird as a *Spizaetus*, which however is remarkable for its small feet.

The *Mhorungah* is certainly a rare bird in Southern India. I have only seen it twice, once in the Baramahl, seated on the edge of a tank in the neighbourhood of a jungly district, and again a pair seated on a lofty tree, in a tope in open country in the northern part of the Deccan. I know nothing of its habits or food from personal observation. Mr. Hodgson says the habits of the genus are as follows : " Preys on jungle fowl, partridges, hares—watches from a lofty perch, usually pouncing on its game when near it—sometimes pursues with energy on the wing." Mr. Elliot met it occasionally in the Southern Mahratta country, and from his notes I extract the following observations: " Is the noblest of the Indian Eagles, being seldom seen, and then generally at a great height in the air, in wild and savage places. It preys on the hare—I once saw a pair of them hunting in company, which nearly surprised a peacock, pouncing on him on the ground." I suppose it is more an inhabitant of jungly and wooded districts than of the open plain, as are the true Eagles. I add here,a brief description of my specimen :—Above, hair brown, most of the feathers edged with a lighter tint, and some white about the head and sides of neck. Below, pure white, feathers narrowly streaked in the centre with dark brown—feathers of leg and tarsus, thickly barred with pale fawn brown. Bill of a greenish horn colour. Cere and legs greenish yellow. Irides bright yellow. Length 27 inches —wings 19—tail $10\frac{1}{2}$—$2\frac{1}{2}$ inches beyond wing—tarsus $3\frac{1}{2}$—middle toe $3\frac{8}{10}$ths of an inch. Eyebrows prominent.

Genus CIRCAETUS.—Vieill.

Harrier-eagle—Serpent-eagle.

* *Journal, Asiatic Society, Bengal* No. 65.

13—*C. brachydactylus.*—*A. brachydactyla,* Meger. *White bellied Harrier Eagle or Serpent-Eagle—Samp-mar,* H.—*Mulpatur,* Can.

This species is very generally spread over the country. It affects chiefly the open plains and patches of cultivated ground. It may frequently be observed perched on a low tree, or even a bowrie pole, or seated on the bank of a river, whence it occasionally darts upon its quarry, but generally takes a long and lofty circling flight, or flies heavily along, but a few yards above the ground. The most favourite food of the *samp-mar* is, as its Indian name implies, snakes. It will, however, take other food. Colonel Sykes found a rat in the stomach of one. I saw one strike at a wounded hare, and another make a swoop at a teal that was shot. From Mr. Elliot's notes I take the following :—"Pounces on snakes and guanas—my *meer shikar* has seen them on the ground with their claws on the snake's head, its body coiled round the bird's wings, in which state the herd-boys sometimes kill them. The Yerklees say it has a figure of the God's *chukram* under each wing, by which it prevents the snake going forward. In the stomach of one I found a snake, about 2 feet long, and a centipede."

Irides, orange yellow. Legs, pale and dirty yellow. Length of a female 30 inches—of wings to end of 4th quill 23—tail 12—tarsus 4—middle toe 3—outer and inner toes, without the claws, nearly equal.

14—*C. ? undulatus.*—*Hœmatornis undulatus,* Vig.—Gould, Cent. Him. Birds.—*Goom-can-mooryala,* Mah.—*Crested Serpent-Eagle.*

As I see Mr. Swainson has claimed the priority of the name *Hœmatornis* for his crested bulbuls, I have at present, though with hesitation, retained this species under the genus *Circaetus,* to which it is evidently strongly allied in parts of its structure (more especially its legs and feet) as well as in habits and food, and of which it will probably be found hereafter to form a sub-genus. I have found it in Goomsoor, Travancore, Malabar, and the Baramahl. It almost always affects woody situations, preferring lofty jungle, over which it may often be observed slowly sailing, or seated on a lofty tree, watching for its prey. Its chief food is snakes, which I have found in every instance that came under my observation. Mr. Elliot says "utters a plaintive cry, feeds on insects, lizards and snakes."

Length of male 24 to 26 inches, of female 28 to 30. Of a female 28 inches long, the wings were 17, tail $10\frac{1}{2}$, tarsus $3\frac{1}{4}$, middle toe $2\frac{3}{4}$, tail 2 inches longer than the wing.

Sub Family CYMINDINÆ, Sav.—*True Kites.*

Genus ELANUS, Sav.

15. *E. melanopterus.—Kupāsee*, H—*Blackwing*, Hodgs.

Though very generally spread over India, this kite is by no means common. It is most frequent in woody districts. Its general food is insects (chiefly grasshoppers and locusts), lizards and mice. I shot one in Goomsoor, which was devouring the carcass of a dove; this, however, appeared to have been dead for some time, and I doubt if it was killed by the blackwing. The *Kupāsee* often frequents long grass and grain fields, over which it may be seen to hover like the *Kestril.* It is comparatively rare in the Deccan, owing to the country being so devoid of trees. For a full account of this bird, its habits, &c. and accurate measurements, *vide* a paper in this Journal No. 16 by Mr. Hodgson. Irides fine crimson. Legs deep yellow, peculiarly soft and gummy.

Sub Family BUTEONINÆ—*Buzzards and Harriers, &c.*

Genus MILVUS, Auct.

16. *M. Cheela.—M. Govinda*, Sykes.—*Cheel*, H.—*Common* or *Pariah Kite.*

This very useful bird is extremely numerous, more especially in cantonments, villages and camps, and is continually on the look out for refuse of every description. Colonel Sykes says "constantly soaring in the air in circles, watching an opportunity to dart upon a chicken, and upon refuse animal matter thrown from the cook-room." I rather think that the blame of carrying off chickens is, occasionally at least, unjustly attributed to this bird. Vide *postea, Spizaetus.* Away from cantonments, it preys chiefly on reptiles, is also remarkably fond of fish, both fresh and dried. Has a very shrill cry or squeal. Irides dark brown, bill black, yellow cere, legs yellow, anterior scales large and transverse, all the others small, irregular. Length 23 to 26 inches; of one 23 inches long the wings are 18, tail $10\frac{1}{2}$, tarsus 2, middle toe $2\text{-}1\frac{1}{10}$.

17. *M. pondicerianus.—Haliæetus pondicerianus.—Roo-mubarik (*Angl. happy face*), H.—vulgo, Bahmunee cheel.—Brahminy kite* of Europeans.

There is great dispute among naturalists, as to the true situation of this very common bird: most writers refer it to the genus *Haliæetus* or sea eagle. Swainson refers it to the *Accipitrinæ* or hawk family, but at the same time allows its near alliance to *Pandion.* Hodgson, the only writer who has observed it in its wild state (except Colonel Sykes who refers it to *Haliæetus*) calls it a paltry *milvine* bird, and says it should be placed as a *Buteo* or *Milvus.* With this opinion, I nearly agree, and accordingly place it for the present as a *Milvus*, of which, or of *Buteo*, it will probably be hereafter found to constitute a sub-genus. The greatest difference is, perhaps, the shape of the bill, and in the young bird, this is much less perceptible. Its manners, mode of life, &c., are certainly similar to those of the kite, being much on the wing, sailing over tanks, paddy fields, and rivers, at a moderate height, and with a flight like that of the kite, but perhaps with more frequent motion of its wings. Hodgson says it quests like *Circus.* This I have only seen in wooded country (in Travancore) and then its flight was higher and not nearly so regular. I may also remark that its squeal is very similar to that of the kite. Hodgson says, it lives chiefly on insects. Colonel Sykes says, it never feeds on carrion but always on fish (living). From my own observations, made chiefly in the Carnatic, where it is very abundant, I should say it prefers aquatic food. It may frequently be observed to carry off a fish from the surface of water, but I never saw it dip under, as Colonel Sykes relates. It also feeds much on crabs from tanks and paddy fields, also on frogs and various aquatic insects; and occasionally carries off a dead or wounded snipe, or other bird, and even carrion, and, it is also credibly said, young birds, chickens and pigeons, though I have not myself witnessed it. I have, though, very rarely, seen it whip an insect off a tree or standing grain: this, and its food generally, if not heavy, it often devours in the air, like the common kite, or seated on the edge of a tank, or river, or bank of a paddy field. It partakes very greedily of the small fish so generally dried by the poor on our coast, and I have repeatedly seen it catch one thrown up in the air for that purpose by a native. From this we must conclude that it varies its food, according to opportunity, but undoubtedly it prefers the neighbourhood of water, and aquatic food, as crabs, frogs and fish, when procurable. It is, as is well known, sacred to Vishnoo.

Length 18 to 22 inches—of one 18½ inches long, the wings to 4th quill are 15 inches; tail 8¼; tarsus and middle toe about equal, nearly 2 inches. Irides brown; legs dirty yellow; anterior scales large transverse—posterior smaller, in a double row—lateral scales small, bill greenish horn colour, whitish at tip; cere greenish white.

Genus PERNIS, Cuv.

Honey-buzzard—Shahutela, H.

18—*P. cristata*, Cuv.—*F. ptilorhynchus*, Temm.—*Crested Honey-buzzard.*

I have only met with this bird in the jungles of the Western Coast and Neilgherries. It is by no means common. I occasionally saw it seated on a tree, alternately raising and depressing its peculiarly formed crest, and on the Neilgherries frequently saw it questing diligently backwards and forwards over the dense woods there. I procured a female at the foot of the Conoor pass, and a male on the summit of the hills. Their usual flight is rather slow, but I once observed one flying much more rapidly than in general with a continued motion of its wings, and every now and then stopping and attempting to hover, which it did with its wings turned very obliquely upwards; this seemed a great exertion to it and was very clumsily performed. In the stomach of the female I shot, was a soft green mass which looked like vegetable matter, but which was probably the half digested remains of green caterpillars. In the stomach of the male there was a large quantity of pure honey. (Mr. Elliot found the hair of a rat in the stomach of one—in another ants, wax, and honey). The female contained an egg ready for expulsion, which was very different in colour from that of the English honey-buzzard, recently figured in the 'Naturalist's Library,' and closely resembled that of the common European kite, also figured there.

As my specimens differ somewhat from the descriptions of this bird in Cuvier and Lesson, I shall briefly describe them. Female—colour of plumage pale brown; lightest below and darkest on the scapulars and larger coverts; the shafts of the feathers of head, neck and breast, dark brown; an occipital crest of 3 or 4 deep brown oval feathers; a few white blotches on the belly increasing in number towards the vent; tail light greyish brown, numerously barred with deep brown, three of the bars being conspicuously broader than the others. Bill blackish blue colour; legs and feet yellow; irides bright yellow.

The male bird is throughout of an uniform dark clove brown, with rather less white about the belly and vent.

Length of male 24, of female 27 inches : of the latter the wings are 18 ; tail 11; tarsus $2\frac{1}{4}$; middle toe $3\frac{2}{10}$ths ; outer and inner toes, without the claws, nearly equal. The irides of one of Mr. Elliot's specimens were blood red.

19.—*P. Elliotti*, Jameson's Edinburgh New Philosophical Journal (no description).

The following account of this new species of honey-buzzard, I take entirely from Mr. Elliot's notes, who met with it in the Southern Mahratta country, and took home specimens, which are deposited in the College Museum, Edinburgh, and in honour of whom it was named by Professor Jameson, of Edinburgh. I have never met with it.

Description.—Hind head considerably crested; colour above, brown, the crest and shades on the back very dark; head, neck, and middle coverts very pale, intermixed with white; ocular band dark brown ; cheeks and beneath white ; throat with a few brown lines ; quills with darker bands on the inner webs; tail irregularly dark banded with 5 or 6 bands, edged with whitish, and passing into pale brown in the centre of the intermediate spaces ; cere, legs and irides yellow; beak and talons black, the former paler at base. In another specimen the space in front of the eyes and a band below the eyes also were dark, and the tail had two broad dark bands near the base, and one near the tip, with between them about six narrow pale transverse stripes, also whitish extreme tip.*

Length of male about 2 feet ; beak $1\frac{6}{10}$ths of an inch to front ; tail 10 inches, exceeding wings by $2\frac{1}{2}$ or 3 inches ; tarsus $2\frac{3}{10}$ths ; middle toe 3 ; claw alone $\frac{9}{10}$ths ; bill strong bent with scarcely a festoon ; claws strong, bent and channelled. In the stomach of one were some fragments of black ants, some hair, and what was supposed to be the rough skin of a monitor lizard : another had eaten honey, wax and bees.

* It differs entirely from the former in having a smaller crest, and being altogether of a light colour, and *white* beneath ; the *Ptiloryhnchus* being nearly black, dotted with white beneath and under the wings, and the tail with fewer bands.—W. E.

Genus SPIZAETUS, Vieill.—*Eagle buzzard.*

20.—*S. milvoides.*—New species. ?

Description.—Head and hind neck of a pale orange brown, the feathers lanceolate and streaked in centre with dark brown. Some of the feathers of the occiput entirely brown and elongated, showing that the bird has been probably crested (I did not see it in the fresh state) ; a narrow superciliary stripe, and a band from the angle of the mouth to the ears and chin, deep brown. Rest of the upper plumage of a sepia brown ; middle coverts and some of the scapulars, broadly edged with whitish brown, causing a conspicuous broad light coloured mark on the wings, as in *B. teesa* and, though less conspicuously, in the *Milvus cheele* ; tail darker, barred indistinctly on the inner web only. Beneath, dark reddish brown—palest on the feathers of the tarsi. Cere and nasal portion of the bill yellow—feet do. Bill small, bending from the base ; cutting edge almost perfectly straight. Inner edge of the centre claw, dilated, as in *Pernis*. Feet short ; length 23 inches ; wings 16¾ ; tail beyond, 2 ; from base 9 ; tarsus 2½, stout ; mid. toe 2¾ ; three broad scales at the base of each claw, inner claw very large.

This is the bird alluded to, under the head of the common kite, as the one to which the blame of carrying off chickens, pigeons, &c. should, at all events from the accounts I received, be sometimes attributed. My attention was first called to this bird at Trichinopoly, by Mr. Hooper, C. S. who kindly gave me a specimen shot by himself in the act of pouncing on some of his pigeons. I occasionally afterwards recognised it, as I thought, among the kites, and saw it attempt to swoop off chickens and pigeons, though I failed in procuring a second specimen. Its appearance in the air and mode of flight much resemble that of the kite, but the crows appear to distinguish it readily, and often clamorously pursue it. I have not hitherto observed it elsewhere. I have given it provisionally the name of *Milvoides* from the general similarity of its markings, and its usual association with the common kite.

Genus BUTEO.—Auct. *Buzzard.*

21. *B. longipes.*—New species ?—*F. albidus ?—Temm. P. C.—Chooamar*, H ?—*Long legged buzzard.*

This bird, if a true species of buzzard, and hitherto undescribed, may be named as above, from its long tarsi, which evidently ally it to the Harri-

ers. It approaches somewhat to the description of *B. albidus, Less.* but that is said to be crested, and if so, is more probably a honey-buzzard.

Description.—I possess two specimens differing a good deal from each other, both of which I shall briefly describe.—The first has general ground tint of a yellowish brown, purest on the head, neck, throat and breast, most of the feathers are centred darker. On the back the tint is nearly lost by the prevalence of the darker shade, an edging of the lighter colour only being left; quills with outer web greyish, inner web blackish from tip to deep sinuosity; white beyond; tail reddish grey and indistinctly barred. Belly, vent, thigh, coverts, deep auburn brown; the line of demarcation between this and the lighter tint of the breast strongly and abruptly marked. Cere pale greenish yellow; irides yellow; legs dirty yellow; length 26 inches; wings 18½; tail 10; tarsus nearly 4; mid toe 2¼.

My other specimen I at present possess alive, having only very slightly wounded it: its head, neck, throat, breast, and belly are white, streaked on some of the feathers with reddish brown; back, as in the other specimen, but rather lighter; tail with the outer webs reddish white; inner white, indistinctly and incompletely barred with darker; cere yellowish green; irides pale yellow. This is apparently the younger bird of the two.

This bird differs from the characters of *Buteo* in its higher bill and larger cere and nostrils. In these respects, as well as in its length of tarsus, it approaches the *Circi*, but has remarkably short though strong feet and claws, a robuster make, and different habits. Tarsus shielded anteriorly and posteriorly with large and well defined scales; toes only furnished at their extremity with large scales; outer and inner toes, without the claws, sub-equal; wings with 4th quill largest, reaching to end of tail, which is slightly rounded; four first quills much notched.

This is certainly a rare bird. I have hitherto only seen it near Jaulnah, perched on low trees or on the ground, in fields, or near water, and taking a low and short flight to another similar perch. In the stomach of the specimen I shot there was a *Gryllotalpa*. Mr. Elliot, who met with this species only in Guzrat, says, "This bird evidently preys on the field rats which abound in the sandy soil of this province. He is seen sitting on low trees or bushes, over the rat burrows, and, watching his opportunity, darts down on his victim. In the stomach of one were the exuviæ of a rat (*Arvicola*) and a large beetle." He also says, "eyebrows very prominent; large eye; full pupil; irides pale dun."

22—*B. teesa,* Gray.—*Circus teesa,* Frankl.—*F. trivirgatus,* Temm.—*Astur Hyder*, Sykes.—*Teesa*, H.

I shall, for the present, here place this somewhat anomalous bird, and shall consider it as a connecting link between the buzzards and falcons. Colonel Sykes, and others, consider it as an *Astur*, to which it certainly has some resemblance; but as in Swainson's classification the falcons and not the hawks are united to the buzzards, and as it certainly in many points is allied to *Buteo*, I have accordingly left it as the medium of junction of the two families. I am by no means certain, however, that it should remain here; for its small size, its manner of flight, and other habits, tend to remove it from this heavy-flying family. I have only hitherto seen the *Teesa* in the more northern portion of the Deccan, and it increases in number as you advance to the northward; about Jaulnah it is very numerous. It frequents topes, as well as the open country, where it may be seen seated on low trees and bushes, an ant hill, or the banks of rivers, whence it pounces on mice, lizards, small snakes and various large insects and their larvæ. Mr. Elliot in his notes says, "It is said to be fond of crabs. It certainly does not refuse them. I saw a *Pardee* catch one directly by baiting his springs or nooses with a crab." The flight of the *Teesa* is tolerably rapid, performed by repeated strokes of the wings, exactly like that of the *Kestril*, for which at a distance I have occasionally mistaken it. Its flight too in general is low. I have seen it several times take a much more extended flight than usual over a *rumna*, flying at a low elevation, and now and then rising slowly a few feet, and I observed it apparently capture a locust or some other insect on the wing. I possess at present a pair of the *Teesa* alive, a young male and adult female. The male has much white below, streaked with brown, and the brown of the upper parts is not so dark as in the adult specimen. The irides are light brown. I had lately also brought me a full fledged young bird, which had dropped from the nest. In this the head, back of neck, and all below, were of a reddish fawn colour, streaked with brown. The light wing spot was also of a reddish white colour, and the irides dark brown, in other respects it did not differ materially from the older birds; has a plaintive but crowing call, consisting of two notes. Irides silvery white; cere and part of bill yellow; tip of the latter blackish; legs and feet yellow. Length 16—17½; of a fem. 17½, the wing 12—tail 6¾—tarsus, 2¼, mid. toe 2.

I shall here add a few particulars respecting the structure of this curious bird. Bill rather short, edge of the mandible scarcely festooned, gradually bending from base, nostrils rather small, pyriform, with narrow point,

placed upwards and forwards; wings reaching to within about an inch of end of tail; 3d and 4th quills longest and nearly equal; four first, with webs, notched, but not so deeply as in the last species. Legs and feet moderate, strong; anterior scales large, transverse; posterior not so distinct, in a double row. Internal lateral scales small, irregular. External ditto, larger. Feet short; inner toe without the claw, shorter than the outer one; whole length of the toes covered with broad scales.

Genus CIRCUS, *Bechstein—Harrier.*

23—*C. pallidus*, Sykes.—*C. cyaneus*, var?—*Dust-mal*, H.—*Indian Harrier* and *Ringtail.*

Besides the peculiarities of plumage which induced Colonel Sykes to separate this bird from the European *Harrier*, it differs in having the wing longer, being in some specimens 14½ inches long, and reaching within 1½ inch of the end of the tail; it also differs somewhat in the proportionate length of the quills.

The Indian *Harrier* is very generally spread and in many parts indeed very abundant. It frequents the open stony plains and cultivated ground; especially when the grain is high—occasionally, though rarely, I have seen it in cantonment, hunting along a hedge side. I have seen it perch on trees, though very seldom. Its chief food is lizards, locusts and grasshoppers—also mice and small or young birds, especially quail, if an opportunity occurs of suddenly snatching them. Mr. Elliot says in his notes, "migrates from Southern Mahratta country in February, and returns at the end of the monsoon like the *Bhyree.*"

24.—*C. cineraceus*, Mont.—*C. Montagui*, Vieill.*—*Montague's Harrier.*

This species is I think more abundant even than the last in the table land, but I did not observe it in the Carnatic. It frequents the same ground, and has the same habits as the last. It differs remarkably from it in the length of the tarsus, which is only 2¼ inches in the male bird, whilst in *C. pallidus* it is about three inches.

* I cannot help thinking that Nos. 23 and 24 are the same bird. I deposited a series of specimens showing the varieties of age and sex in what I considered to be three species, but which, on comparison, were found to agree pretty exactly with a full series of English specimens in the College museum Edinburgh, and by which I was satisfied of the existence of two well defined species only,—*Circus cyaneus* and *C. cineraceus*, or *Montagui.* —W. E.

25.—*C. rufus*, Briss.—*C. variegatus*, Sykes' adult bird.—*Marsh-Harrier.* —*Kootur*, H.

I venture to bring these synonymes together on the authority of Gould, as mentioned in a late volume of the Naturalist's Library on British Birds. The *marsh-harrier* is generally spread throughout India, but is not nearly so common as either of the former species. It prefers hunting over rivers, tanks, marshes and paddy fields, but also is frequently seen skimming over the dry grain fields; it feeds on various water insects, fish, frogs, mice and small birds. The irides of the adult bird are yellow, of those in imperfect plumage, dark brown. Length of one specimen 21½ inches, wing, 16, tail, 9, tarsus, 3-$\frac{2}{10}$ths, mid. toe, 2½.

26.—*C. Melanoleucus.*—*Black and White Harrier.*

Though I have not yet procured a specimen of this rare *Harrier*, I have seen it occasionally both in the Carnatic and West Coast, and it is included in Mr. Elliot's catalogue of the birds in the Southern Mahratta country, from which I take the following, measurements:—Length 17—18 inches; tarsi 2-$\frac{8}{10}$ths, weak; mid. toe 1½; bill and cere black; legs yellow; wings 1-$\frac{7}{10}$ths, shorter than tail.

Sub Family FALCONINÆ, *True Falcon.*

Genus FALCON.—Auct. *Falcon.*

27.—*F. peregrinus*, *Peregrine Falcon.*—*Bhyree*, H.—the male being the *Bhyree bucha.*

It is surprising that the *Peregrine* falcon has not hitherto been recorded as an inhabitant of India, as it is universally spread and much used in Falconry by the natives. No mention of its having been found here is made in 'Yarrell's British Birds,' nor in Sir W. Jardine's later work, though in the latter it is stated 'we think it much more than probable that it may also be found in the Alpine regions of India.' The *Bhyree* is found even in the hottest parts of the peninsula. I obtained one alive at Trichinopoly which was said to have fallen into a tank. Many are yearly captured about Ramnad and also in the Northern Circars. I shot a specimen on some rocks, in the sea of Tellicherry, at the end of

April; and it is tolerably abundant in the more northern parts of the Deccan, as near Jaulnah, occasionally coming into cantonment and carrying off chickens, &c. Mr. Elliot in his notes says, " It is migratory, appearing on the eastern shores of the peninsula in September or October, and remaining till March or April, when it disappears for the purpose of breeding and moulting." (I think I have observed it as late as June near Jaulnah, but cannot be certain). " Great numbers are caught every year in the Northern Circars by a cast named *Yerklees*, and sold to the falconers of Hyderabad, Kurnool, &c., at an average of 10 rupees each. The falconers distinguish three kinds, the black, the red and the white, according to the shades in their plumage." The *Bhyree* affects, in general, open country, rocky hills and deep valleys where brushwood abounds, also frequents tanks, and preys much on paddy birds, ducks and other water-fowl. It is more esteemed for its courage and powers of flight than either of the other two large falcons found in this country. It does not differ, as far as I can judge, from the descriptions of British specimens.

28.—*F. luggur*.—New species?—*F. lanarius*, L.?—*Luggur*, H.—the male being the *Juggur*.*

This species of falcon, apparently undescribed, appears much to resemble the description of *F. lanarius* or the *Lanner*; but, owing to the only description I have access to being very brief and imperfect, I cannot speak with any certainty. It is said by Mr. Gould to exceed the *Peregrine* in size, and if so, is probably distinct as the Indian bird, though much about the same length as the *Peregrine*, is not so large or heavy a bird. Mr. Gray has given the specific name of *juggur* to a falcon, which I do not know, but which does not resemble this one in the least.

The *lugger* is the most common of the large falcons of India; unlike the last it breeds here and on trees during the hot weather.

Descr.—Above, of a uniform brown colour; below, white, with a few brown spots and brown cheek stripe; cere and legs, blueish; wing feathers hardly reach to the end of the tail. Quills and rectrices with numerous white spots on their inner webs; young bird is entirely brown

* The old bird at the 5th year is figured in Gray & Hardwicke, very correctly; vol. ii, pl. 26. Mr. Jerdon's remarks, seem to refer entirely to the young bird. It is probably a new species, differing from the *Lanner*; is about the same size as the *Shaheen*, and much smaller than the *Peregrine*.—W. E.

below. It loses the brown of the breast at its first moulting, and that of the belly with the two following moults. Length of an adult female, first year, 19 inches. I have derived most of the above information, regarding the change of colour of the *luggur*, from Mr. Elliot's notes, as, though it is far from being uncommon, and I have frequently seen it, I have hitherto only procured young birds. One was brought to me alive at Trichinopoly; it was a bird of the year, and entirely brown. Another I shot lately at Jaulnah, has the head and hind neck of a light fawn colour, broadly streaked with brown; chin and throat white; feathers centred with brown; under tail coverts fawn, barred with brownish grey, rest of the plumage dark brown, the feathers margined with a lighter tint.

The *Lugger* is flown frequently at the crow, in pursuit of which much sport is said to be afforded. It is a bird of heavier and slower flight than any of the other falcons of India.

29.—*F. Shaheen.*—New species.—*Shaheen*, H.; the male being the *koela*.*

This also apparently undescribed falcon, very much resembles the colouring of the *F. juggur* of Gray, but differs in wanting the rufous head of the latter. It is not so common as the last, I think, and prefers a wooded country, or at all events does not dislike it, for I have shot it in Travancore, in a thickly wooded district, and seen specimens from other parts of the West Coast. From Mr. Elliot's notes I extract the following: "The *shaheen* is a native of India, and breeds pretty generally among rocky mountains. The moulting begins about March, when they also pair, and the young begin to fly about June, when they are caught by the falconer. Their natural flight is a high hovering in the air, from which they pounce on their prey. This the falconer improves into a standing gait, and makes them stoop on partridges, florikin, &c. I have also heard of their being made to fly at duck and teal."

Description.—Above, of a slate blue colour, lightest on the rump; head, hind neck and cheek streak nearly black; beneath, brownish orange, or a sort of chesnut colour, which gradually disappears on the throat, breast and upper part of belly, being replaced by white. In the young bird the parts beneath are spotted with dark brown drops, which gradually disappear from the crop downwards. Cere and legs yellow; irides

* It is figured correctly in Temminck, Pl. Illum. as *F. Aldovrandii.*—W. E.

deep brown ; quills and tail blackish grey. Length of female 17—17½ inches: of a male bird 14¾ : wings to end of second quill 10¾ ; tail 5¼; tarsus 1½: middle toe 2½. It differs in structure from the *Peregrine* in having a shorter wing, shorter tarsus, and in the 3d quill (if my specimen is in perfect plumage) being considerably shorter than the first.

The *Shaheen* is said to be very speedy, even more so than the *Peregrine*, though it will not hold out so long.

30.—*F. chicquera*, Lath.—*F. ruficollis*, Swain.—Fem. *Turoomtee*—male *Chetwa*, H.

The specific name of *Chicquera* has been erroneously applied to this species, being the Indian name for the common sparrow hawk of the country. It corresponds in colouring exactly to the description by Swainson of his supposed new species ;* the black marks round the ear and beneath the eye, supposed by him to distinguish his *ruficollis*, are always present. It is generally, however, a larger bird. The *turoomtee* frequents patches of wood or single trees in the open country, and even gardens. It is found in all parts of the peninsula, is a bird of great courage and activity, generally hunts in pairs, rising alternately over their prey, and sometimes following closely on the wing. I have seen it hover, occasionally, though rarely. It preys chiefly on small birds. Mr. Elliot has, " will not suffer other birds to approach their perch, but drive away even the *wokhab*, hovering over him with shrill cries. The *turoomtee* is occasionally reclaimed and flown at small birds, especially at the common jay or roller (*Coracias Bengalensis*), in pursuit of which much amusement is afforded from the clumsy evolutions and harsh cries of the quarry." Naked space round eyes, cere and base of bill yellow ; legs do. ; length 14—15 inches,—of *chetwa* 11—12. Tail exceeding wing by nearly two inches.

31.—*F. tinnunculus*, L.—*Kestril* or windhover.—*Nurzee Nurzanuck*, H.

The *kestril* is an extremely common and abundant bird, frequenting chiefly the open plains and bare rocky hills. Its chief food is lizards, also large insects, and occasionally young birds. The male is occasionally as large as the female.

* V. Birds of West Africa, vol. 1.

Sub Family ACCIPITER.—*Hawks.*

Genus ACCIPITER, Will.—*Sparrow Hawk.*

32.—*A. dukhunensis*, Sykes.—*A. dussumerii, Temm. ?—Chicquera* or *Shikra*, H. ; the male *chipka.*— Common *sparrow hawk.*

Colonel Sykes has accurately described the young state of this bird ; but the adult plumage differs so much that it might be mistaken for a distinct species, and I shall accordingly describe it :—Above of a delicate bluish grey colour, darkest on the head, ears greyish fawn, throat white, with,in some instances,a faint longitudinal stripe; breast and belly white, very numerously barred with narrow, transverse, fawn coloured marks, so much so as almost to conceal the white ground. Lower belly, thighs and under tail coverts pure white; a brownish red mark extends partially round the upper part of the back of the neck, forming a half collar, only conspicuous however when the neck is stretched. Quills blackish. Tail with 2 middle and 2 outer feathers not barred, the remaining ones only on their inner webs. Cere bright yellow ; irides, deep orange yellow ; feet buff yellow ; length of male $12\frac{1}{2}$ inches; of female $14\frac{1}{2}$; of the latter the wing to end of 4th quill is $8\frac{2}{10}$ths ; tail 4 inches beyond, from base nearly 7 ; tarsus about 2 ; mid. toe $1\frac{8}{10}$ths ; tarsus with anterior scales large, transverse ; posterior scales, small and numerous above, larger below, and in two rows ; external lateral scales distinct and transverse ; internal lateral, indistinct,or confounded with the posterior.

This widely spread hawk prefers a woody situation, though not in general found in thick jungles. It hunts about avenues, hedge rows, topes and open spaces in the jungle, often enters gardens, approaching close to houses. It takes its prey by a sudden pounce, seldom attempting to follow. Its chief food is lizards and small or young birds. The *Shikra* is very commonly reclaimed ; in this state it is a bird of great courage, and will easily strike down partridges, crows, and even larger birds, as the small hornbills (*B. gingianus*) and young half grown peafowl. I am informed that at Hyderabad it has been trained to hunt hares. Mr. Elliot says, " a variety without the black line on throat is called *meetun*, and is particularly esteemed in falconry."

I think it barely possible that the *F. Dussumerii* of Temm. may be identical with this bird ; though I see Colonel Sykes has referred to this another species, and Mr. Elliot considers it as properly belonging to the next species.

33.—*A. Dussumerii.*—*F. Dussumerii, Temm.* P. C. ?—*Basha* (the female) *Basheen* (the male), H.

I have not hitherto seen this sparrow hawk, and take the following brief description from Mr. Elliot's notes : "Above, brown, white eyebrow, tail with 5 or 6 bars; beneath, white barred, and a tinge of reddish on breast : utters a plaintive cry like the *besra* ; legs long and thin." Colonel Sykes says, 'Irides bright yellow, wings short, tail long and narrow ($6\frac{1}{2}$ inches) ; total length of a female $12\frac{1}{2}$ inches.' As I before stated, I think that this species may be yet undescribed, for several specimens of *F. Dussumerii* appear to have been taken home by the French travellers, and the *Shikra* is the only species at all common.

34.—*A. Besra.*—New species ?—*Besra* (female), *Dhotee* (male), H.

Of this species I am also ignorant, and am indebted again to Mr. Elliot's notes for the following very brief notice.

" Above, brown ; beneath, white with brown spots ; becoming more cinereous with age, and the spots beneath becoming broad bars ; cere and legs greenish yellow ; eyes yellow, large pupil ; length about 12 inches, tarsus $2\frac{2}{10}$ of an inch."*

35.—*A. fringillarius.*—*English sparrow-hawk.*†

I shot a specimen of what I suppose may be the European species in thick and lofty jungle on the Coonoor pass of the Neilgherries, at about 5000 feet of elevation—I add a description of my specimen :—Above of a deep clove brown with black reflections, head and back of neck almost black, tail light grey, with 4 broad dark bars on the centre feathers, and 6 on the external ones, face and ears dusky, throat white, with a longitudinal stripe, and a few streaks of dusky black ; breast, abdomen, and thigh coverts, white, numerously and broadly barred with rufous brown, mixed with dusky brown ; under tail coverts pure white ; cere and legs lemon yellow ; irides bright yellow ; total length $14\frac{1}{2}$; wings to end of 4th quill $7\frac{1}{2}$; tail $5\text{-}\frac{8}{10}$ths ; tarsus 2 ; middle-toe $1\text{-}\frac{7}{10}$ths ; tarsi thin, with the anterior and posterior scales each of one entire piece ; no lateral scales.

* I have only met with it in the Soonda jungles, where it is taken young by a caste called *Halapyks*, and sold to falconers from Hyderabad.—W. E.

† I think the *Basha* will ultimately turn out to be identical with this. My impression on seeing the *Basha* in the *Gykwars Shikar Khanah* at Baroda, was that it was the English sparrow hawk. It was very like the *Baz* in miniature, which I here first identified as the *Goshawk*.—W. E.

Genus ASTER.—*Goshawk.*

36.—*A. palumbarius.*—*Goshawk.*—*Baz* (female), *Joorah* (male), H.

I obtained a specimen, of what I consider as the young male of this bird, seated on a bough on one of the thick woods of the Neilgherries close to Ootacamund. I several times afterwards observed a pair of apparently the same bird hunting together near Coonoor, where they had committed several depredations on some pigeons, and I one day saw them make an unsuccessful swoop at a flock of pigeons close to the house. Their flight was swift, similar to that of sparrow-hawks, but at a considerable height, whence they made a sudden pounce. I add a description of my specimen:—Above of a dark brown; the eyebrows white, and the feathers of the head, hind neck, and upper part of back narrowly edged with whitish, and with white base; tail of a lighter tint, barred with 4 dark bands on centre feathers, and 5 on the rest; beneath, white; on the sides of the breast a cluster of large oval brown spots, and a few others sparingly distributed over the abdomen; the thigh coverts are transversely banded with brown; cere and feet lemon yellow; irides bright yellow; length $16\frac{1}{2}$ inches; wing $8\frac{1}{2}$ to the end of 4th quill; tail beyond $4\frac{1}{4}$, from base 7; tarsus $2\frac{1}{10}$; feathered in front more than half its length; middle toe 2 inches; anterior and posterior scales large, transverse; external lateral, small irregular. I see by Mr. Elliot's notes that he considers the celebrated *Baz* of India to be identical with the European goskawk.

Family STRIGIDÆ.—*Owls.*

Sub Family STRIGINÆ.—*Typical owls.*

Genus STRIX, Auct.

37.—*S. Javanica. Horsf.*—*S. flammea*, var. ?—*Kareya*, or *Kurail* H.—*vulgo*, *Booree Chooree.*—*White Owl.*

This has been separated from the European species on account of some slight though permanent deviations of colour, which many do not consider as sufficient to warrant a specific distinction. As, however, Colonel Sykes has followed Horsfield, I shall also do so. The white owl frequents wooded places, topes, bushy nullahs, and trees, near tanks

and rivers. Though generally spread, it is not very common. It utters a harsh shrill cry at night; Mr. Elliot in his notes says, "The natives assert that in doing so, drops of blood are forced from its bill, and should any of these fall on the backs of cattle, they become weak in the loins."

The chief food of this owl is rats and mice. Whilst at Madura lately, one flew into my room at an open window after a rat that was running about, and I secured it alive; length of one specimen from tip of bill 17; (from top of disk 14) wings 12; tail 5; tarsus $2\frac{3}{4}$; middle toe $2\frac{1}{4}$; expansion of wings 3 feet.

38.—*S. Longimembris.*—New species?—*S. Javanica,* var.?

On the Neilgherries, near Coonoor, in a bushy valley, I obtained a specimen of an owl very similar to the last, but differing in some structural points, as well as in the shade of plumage. If it should be considered a distinct species, it may be named as above, from the comparative length of both wings and legs.

Description.—The ground tint of the plumage is similar to that of *S. Javanica,* but lighter or more yellow. The grey tint on the upper plumage of the latter is replaced by a deep brown colour, and the white spots are less numerous. Below, the white is much tinted with ochereous, and the brownish red spot on the disk of the common species is here of a very deep brown. The most important differences, however, are structural, as will be seen by comparing the measurements with those of the last.

Total length about $17\frac{1}{2}$; of wing $14\frac{1}{2}$; tail $5\frac{1}{4}$; tarsus $3\frac{1}{2}$; middle toe $2\frac{1}{4}$. The wings reach two inches and more beyond the tail, whilst in *Javanica* they only reach half an inch or so. A similar species to this is indicated in Griffith's Cuvier as follows—"*Tuidara,* owl—*S. perlata,* Licht.—*S. Tuidara,* n. &c. Like *S. flammea,* but the legs are longer—Brazil."

Genus OTUS, Auct.

39.—*O. brachyotos,* Cuv.—*Short eared Owl.*—*Chota Ghooghoo,* H.

I have hitherto only obtained this species on the table-land, though I am informed it is also found in the Carnatic and Northern Circars in suitable ground. It is not very common—frequents long grass on the open plains, and is occasionally flushed when beating for florikin. Of

two specimens I possess, one is nearly white below, whilst the other is of a deep ochreous tint throughout.

40.—*S.*? *lugubris*, Tickell*—Jour. As. Soc. Ben. No. 23.—*Choghud Besruh*, H.

As I have never seen this species of owl I merely place it here provisionally. It probably does not belong even to this sub-family, for Mr. Elliot (to whom I am indebted for my knowledge of it as a peninsular species) says, " It seems to belong to the falconine owls, with a short tail, of Cuvier."

Description.—Above of a uniform dusky brown, beneath whitish, barred with rusty brown like the *Besrah*—this barring decreases in quantity every year. A white line on the forehead, wings and tail, with dark transverse spots; bars of the tail five in number, and the latter tipt with white. Irides, large, yellow; cere greyish, fringed with black hairs; legs greyish, covered with hairs to the toes; length about 12 inches, breadth 26. This owl inhabits hills, rocky and jungly places. Mr. Tickell says, " inhabits the retired parts of the thickest jungle, coming towards the edges and open parts at night. It is completely nocturnal, and in a calm moonlight night its cries may be heard to a great distance, resembling strongly those of a strangling cat." Mr. Elliot says, " when seized cries like a child."

Sub Family ———————— ? *Sub-typicel Group*, Sw.

Genus URRUA, Hodgson.†

41.—*U. Bengalensis.*—*Otus Bengalensis*, Frankl. and Vig.—Gould. Cent. pl. 3—*Googoo*, H.—*Common Indian horned Owl.*

This large and handsome owl is the most abundant and most universally spread of the large owls of India. In the Carnatic the *googoo* frequents rocky barren hills chiefly, where seve-

* I have adopted the name given to this species apparently by Lieut. Tickell, of the Bengal army, in an excellent account of a few birds collected by him in the jungles of Borabhum and Dholbhum. It would not I hope be too much to expect from him a full catalogue of the birds of the vast plains of Bengal, and neighbouring countries, arranged according to the modern nomenclature, in which his former list is rather deficient. From this list (published in 1833) he appears highly qualified for the task, and as it is undoubtedly a desideratum, I trust he will be induced to undertake it.

† Journal Asiatic Society Bengal—No. 65.

ral may often be seen seated even for some hours after sunrise. In the Deccan it frequents rocky ravines, banks of rivers, and holes in the steep sides of the precipitous trap hills—also often found about old buildings, forts and walls. On the Neilgherries it is however generally found in the dense woody glens there. Though partially diurnal, it chiefly preys during the night; its chief food is rats and lizards, occasionally birds, crabs, and frequently large locusts and mantides. I have at present a pair, male and female, of this species alive in my possession. Their usual cry is a single, loud, clear and prolonged hoot. I occasionally at night heard them utter a low indistinct strangling sort of cry. They vomit bones and feathers in the form of a pellet. When alarmed they hiss, and make a loud snapping noise with their bills. If a dog or other animal approaches, they lower the head almost to the ground, erecting the whole of the feathers of the body, and spreading out their wings to their full extent; these from the stooping position of the bird are nearly vertical, almost touching the ground with their upper edge; and from their extent the bird presents a formidable front to an intruder. Their egrets certainly seem connected with their exalted sense of hearing, being generally raised whilst in the act of listening. They are also erect during sleep, at which time the wings are also occasionally brought forward. I may here remark that the egrets of this bird are drawn too large in Gould's Century, and besides they are never permanently raised in the position there indicated, being kept much more erect, nearly vertical indeed.

Genus BULACA, Hodgson, *loc. cit.*—SCOTIAPTEX, Sw.?

42.—*B. Sinensis.*—*S. Sinensis*, Gray, Gray and Hardw. Ill. I. *Z.*—*S. pagodarum*, Temm. P. C.—*S. selo-puto*, Horsf.—*S. Indranee*, Sykes?—Young bird?

I have only once observed this very elegantly marked species, which I have referred provisionally to Mr. Hodgson's lately proposed genus. I met it in a tope, and some large single trees, near Verdupettah to the S. of Madura on the Palamcottah road. If, as I suspect, *S. pagodarum* and *S. selo-puto* are identical with this bird, Mr. Gray's specific name must be abandoned. It is an owl of pre-eminent beauty, both as regards the shade of the plumage and the softness and delicacy of the markings.

Length (from top of bill) 21 inches; of wing 15; tail $7\frac{3}{4}$; tarsus $2\frac{1}{4}$; middle toe $2\text{-}\frac{2}{10}$ths; irides, deep brown. Has aharsh and dissonant cry at night.

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Genus SCOPS, Sav.

43.—*S. Javanicus*, Less.—*S. Lempyi*, Horsf. ?—*S. noctula*, Temm ?—*Indian Scops Owl.*

I procured a single specimen of a small owl, that answers the brief description of Lesson, in the western ghauts near the Peria pass.

Description.—Above, brownish, varied with ferruginous and blackish. Quill feathers with the outer webs marked by several strongly defined bars of buff; beneath of a ferruginous tint, finely vermiculated with brownish, and the feathers streaked in the centre with blackish. Length (from tip of bill) 9½ ; wing 6 ; tail 2¾; tarsus $\frac{2}{10}$ths; 4th and 5th quill feathers longest, and the 2d is equal to the 7th.

Sub Family AËTOGLAUCINÆ, Hodgson.—*Eagle Owls.*

Genus HUHUA, Hodgson, *loc. cit.*

44.—*H. pectoralis.*—New species ?—*Ooman*, Mal.

Description.—Above of a deep sepia brown, having in some lights a golden tint ; most of the feathers, especially on the wing coverts, tertials, scapulars and tail, barred and mottled with light buff. Egrets long, with narrow bars of whitish ; face, ears, rictal and mental bristles silvery grey, very strong and rigid ; the frontal feathers also rigid and bristly. Beneath, white, feathers barred with brown numerously on the throat, less so in the belly and vent, and the bars are larger and take an arrow-headed form. A narrow pectoral band of brown, with a golden tinge, and edged with buff as above. Irides deep brown ; cere greenish yellow ; bill greenish-horn, with a tinge of flesh colour ; toes dirty reddish yellow.

Though I have placed this bird under Mr. Hodgson's new genus *Huhùa*, with which it agrees in some of the most important characters, especially in its large and lengthened bill, large egrets, short stout and feathered tarsi, strong toes, and immense talons, yet it differs in the following respects : the bill is hardly straightened beyond the cere, it has an obsolete festoon, the nares are partially covered with bristles, which extend the whole length of the bill ; the 5th and 6th quills are longest and sub-equal, and the tertials are nearly as long as the primaries ; the hind talon like-

wise is rather larger than the outer fore ; the toes are nearly covered by bristly feathers, and there are 3 large scales on each of the toes next the talons. These differences, however, probably only entitle this bird to rank as an aberrant species, or it may be as a sub-genus. Length, 23 inches; wing 16½; tail 8¼; tarsus 2; mid toe 3; inner 3½.

I have hitherto only found this powerful and splendid owl in the dense and lofty forests of Malabar. It is chiefly nocturnal, issuing forth to the more open spaces about dusk. I was informed by an intelligent native that it feeds on various mammalia, and also on fish, and that it will dive to some depth for these. The stomach of the only specimen I procured was empty. It had just perched on a large palmyra palm overlooking a tank. It utters a low moaning cry at intervals. Should it prove undescribed, it may be named as above, from the marked pectoral band.

Genus CULTRUNGUIS, Hodgson.—*Ketupa*, Less.

45.—*C. Leschenaultii.*—*Ketupa Leschenaultii*, Less.—Temm. P. C. 20. —*S. Hardwickii*, Gray, Gray and Hardw. Ill. I. Z?—*Amrai ka Googoo*, H.—*Large horned wood Owl.*

I have here adopted Mr. Hodgson's excellent and classical name, though that of M. Lesson has the priority, not more on account of his accurate generic definition, than from the excellent composition of the word.* This powerful bird is generally spread throughout India, though far from being common. It frequents chiefly the more wooded districts, though also found in topes and avenues in open country. It is partially diurnal. Its voice is a loud and harsh hollow laugh. I know nothing of its food. Mr. Hodgson says that the genus is piscivorous, and thus the analogy of its feet and legs with those of *Pandion* are beautifully explained. The markings of the species figured as *S. Hardwickii* in Gray and Hardwicke's *Illustrations*, appear not to differ from those of our present subject, and I suspect the sentillation of the tarsi there represented is an embellishment of the native artist, most probably, and that this must therefore stand as a synonyme.

* It is, I think, much to be regretted that Mr. Hodgson, who in this and other instances has shewn his talent in the formation of classically compounded words, should in general adopt unmeaning (to most readers) and cacophonous generic names from the vernacular dialect of Nepal.

Sub Family ——— .—*Hawk Owls.*

Genus NOCTUA, Sav.—Hodgson.—*Althene* of recent authors.—*Nyctipetes*, Sw.

I shall here retain for the present the generic name of *Noctua*, though it has been properly objected to that it had been previously applied to a genus of moths.

46.—*N. cuculoides*, Vig.—Gould Cent. pl. 4.—*Junglee choghud*, H.—*Jungle Hawk Owl.*

This very handsomely plumaged little owl is said in Goulds's Century to be "supposed to be confined to the Himalayas." I have found it wherever there is lofty jungle. In Goomsoor, on the eastern side; and on the west, in Travancore and Malabar, where it is by no means rare.

It frequents lofty trees and flies about actively in the day time, at least when disturbed; I have generally found it single, rarely in small flocks. It feeds on various large insects, chiefly *coleopterous.*

Irides golden yellow; bill and legs greenish horn colour. Length 9 inches; wing 5; tail 3; tarsus $\frac{6}{10}$ths; mid toe $1\frac{1}{4}$.

47.—*N. Indica*, Frankl.—*S. brama*, Tem. P. C. 68.—*Choghud*, H.—*Peenglah*, Mah.—*Little spotted Owl—Divining Owl.*

This little owl is extremely abundant in Southern India (more so, particularly in the Carnatic, I think, than in the Deccan), and is often very annoying from its familiar and noisy habits. It generally roosts during the day in large trees, but frequently also in the caves of houses or under the roof, and though it is most active and noisy during the night time, feeding then, yet it is often very noisy during the day, uttering its harsh squabble, three or four joining in chorus at the same time. Its usual cry is something like '*jukl jukl jukl*', repeated very quickly.

About sunset it usually sallies forth from its roosting place to feed; its chief food is beetles and other insects, but it occasionally captures mice. It takes insects sometimes on the wing, or snaps one off the ground or the trunk of a tree, during its low undulating flight, which is generally short, but at times prolonged to some distance over the plain.

In some parts of the country it is supposed to have the power of divination.

(*To be continued.*)

IV.—*A Catalogue of the Species of Mammalia found in the Southern Mahratta Country; with their Synonimes in the native languages in use there.—By* Walter Elliot, Esq., *Madras Civil Service.*

The district of India, in which the animals contained in the following list were procured, is a part of the high table-land towards the south of the Dekhan, commonly called the Southern Mahratta Country, and constitutes the British zillah of Dharwar. It ought, likewise, geographically speaking, to include the small province of Sûnda, which, according to the political arrangement of the country, is placed under the zillah of Canara, in the presidency of Madras.

The general boundaries are the rivers Kistnah and Bhima on the north and N. E.; the Tungabhadra river on the south; the Nizam's territory on the east, and the Syhadri range of mountains on the west. The latter are generally called the Ghats; a term which however properly applies only to the passes leading through them.

The general face of this tract is much diversified, and affords a great variety of elevation and of geological structure, thereby materially affecting the distribution and the habitat of the different species of animals existing within its limits.

The whole of the western portion is a thick forest, extending from the outskirts of the mountainous region of the Ghats to their summits, and clothing the valleys that extend between their different ridges. It abounds with the teak and various other lofty forest trees, festooned by enormous perennial creepers. The bamboo forms a thick and luxuriant underwood in some places, while others are entirely open, and the banks of many clear and rapid streams flowing through it, abound with the black pepper plant, the wild cinnamon and other odoriferous shrubs. Portions of this forest are often left entirely untouched by the axe or knife, forming a thick impervious shade for the growth of the black pepper, cardamom and Mari palm—(*Caryota Urens*). These are called *kans* and are favourite resorts of wild animals.

To the east of the regular forest lies a tract called the *Mulnad*, or *rain-country* (though the natives of the plains often include the *jhari*, or *forest*, under the same denomination), in which the trees degenerate into large bushes, the bamboo almost entirely ceases, and cultivation, chiefly of rice, becomes much more frequent. The bushes consist chiefly of the *karunda*, the *pallas*, &c. It abounds in tanks and artificial reservoirs for purposes of irrigation.

East of the Mulnad is a great extent of alluvial plain, producing fine crops of wheat, cotton, maizes, millet, &c.* and on the Nizam's frontier are found a succession of low dry hills, with tabular summits, often rising in abrupt scarped precipices, and intersecting and traversing the plains in various directions. They are clothed with low thorny jungle of *babul* and *acacia,* and their bases, and the valleys between, composed of a light sandy soil, are cultivated with millet, vetches, &c.†

The first or mountainous division consists chiefly of micaceous, clay, and other schists, which to the northward are succeeded by basaltic or trap formation. The Mulnad is composed of undulating clay-slate hills, which become covered with basalt to the north. This trap formation extends in a slanting direction from S. W. to N. E. nearly coinciding with a line drawn from Sadasheaghur on the coast, to Beejapoor and Sholapoor—and, what is remarkable, is almost coincident with that marking the separation of the two great tribes of the population using totally distinct languages,—the Mahrattas and Canarese.

The hills to the N. E. and E. are all of primitive sand-stone, sometimes resting on schists, sometimes immediately on granite, which latter is the rock nearest the surface in the central and eastern plains. But a well defined range of hills to the S. W., called the Kupputgud, is entirely composed of micaceous and clay slates, resting on granite. The hills more to the N. and N. W. are basaltic. The extensive plains lying between these different lines of hills and eminences are composed of the rich, black mould, called *regur*, or cotton ground, resulting from decomposed basaltic rocks. To the N. E. a considerable tract of limestone is found, resting on the sandstone, about Bagalkote, Badami Hûngûnd, Mûdibihal, &c.

The distribution of species throughout these different tracts is shown in the following table; those marked * are confined to one tract only :—

* *Holcus sorghum, Panicum Italicum, Cicer arietinum.*

† *Panicum spicatum, Panicum miliare, Phaseolus max, Phaseolus mungo,* &c.

Distribution of Species.

Common to all.	Mountain Forest.	Mulnad.	Black plains.	Sandstone Hills and red sandy soil.
Simia Radiatus	Simia Entellus	Cynopterus Marginatus	Canis Lupus	Simia Entellus (rare)
Rhinolophus	* Mangusta Vitticollis	Megaderma Lyra or Carnatica	—— Aureus	Cynopterus marginatus
Vespertilio	* Felis Wagatee	Rhinolophus Speoris	—— Bengalensis	* Rhinopoma Hardwickii
Pteropus Edulis	Mus Longicaudatus	—— —— Marinus	Felis Jubata	Rhinolophus Speoris
Ursus (Prochilus) Labiatus	Sciurus Palmarum	—— —— Fulgens	—— Chaus	* Taphozous ——
Sorex Indicus	* —— (*dark variety*)	Canis Lupus	Mus Indicus, (black variety)	Canis Lupus
Lutra Nair	* —— Maximus	—— Aureus	—— Mettade do.	—— Aureus
Canis Ferus Dukhunensis	* Pteromys Philippensis	—— Bengalensis	—— Musculus Indicus	—— Bengalensis
Hyœna Vulgaris	Manis Pentadactyla	Felis Jubata	* Antilope Cervicapra	Hyœna Vulgaris
Viverra Indica or Rasse	* Elephas Asiaticus	—— Chaus	* Damalis Risia	Felis Jubata
Paradoxurus Typus	* Moschus Memina	Hyœna Vulgaris		—— Chaus
Mangusta Grisea	Cervus Hippelaphus	Mus Indicus (red variety, rare)		Mus Leggyade
Felis Tigris	—— Axis	—— Mettade, (rare)		—— Budoga
—— Pardus	* —— Muntjak	—— Leggyade		—— Gulandi
Mus giganteus	* Bos Gaurus or Frontalis	—— Budaga		—— Longicaudatus
—— Rattus		—— Gulandi		—— Musculus
—— Decumanus		—— Longicaudatus,		Gerbillus Indicus
Sciurus Palmarum		—— Rufus		Cervus axis
Hystrix cristata		—— Musculus Indicus		* Antilope Arabica
Lepus Nigricollis		Gerbillus Indicus		
Sus Scrofa Ferus		Manis Pentadactyla		
		Cervus Axis		
		* Antilope quadricornis		

CATALOGUE.

1.—*Simia (Macacus) Radiatus.—Cercocebus Radiatus*, Geoff.

Koti, Canarese...................... ಕೋತಿ

Mungya, do. .... ಮಂಗ್ಯ

Munga, do. .... ಮಂಗ

Bandar, Dekhani .... باندر

Makada, Mahratta ....

Kerda, do. of the Ghats........

This species abounds over the whole country, sometimes inhabiting the wildest jungles, at others living in populous towns, and carrying off fruit and grain from the shops of the dealers, with the greatest coolness and address.

2.—*Simia (Semnopithecus) Entellus.—Cercopithecus Entellus*, Geoff.

Moosya, Canarese.................. ಮುಸ್ಯ

Langûr, Dekhani .... لنگور

Wānur, Mahratta......... ....

The black-faced monkey of Europeans.—Abounds more particularly in the forests, where its loud wild cry is particularly striking. They are both useful and troublesome to the sportsman, who may often judge by their agitation and chattering of the vicinity of some beast of prey; while he himself is apt to be assailed in a similar manner when trying to steal upon the more timid kinds of game. The species is celebrated in Hindu mythology, for having, under their leader Hanuman, assisted the hero and demi-god Rama, the first Hindu conqueror of the forests of Southern India, as related in the Ramayana.

The *Entellus* appears to want the cheek pouches characteristic of *Semnopithecus*. An adult male measured, from muzzle to insertion of tail 1 foot 10½—length of tail alone 3 feet 2½—height from heel to crown 3 feet 2½—weight 22 lbs.—do. of an adult female 18.

3.—*Pteropus Edulis medius.—Pteropus Medius*, Temminck; *Monog. de Mam.* I. 176.

Toggal Bawali, Canarese, ... ತೊಗಲುಬಾವಲಿ

Sikatyelle, Do. of the Wuddur caste. ಚಿಕ್ಕಟಲಿ

Gaddal, Dekhani .... گدل

Barbagal, Do....... .... بربا گل

The flying-fox of Europeans. Its flesh is esteemed good eating. The tongue of this animal is remarkable, being covered with large papillæ, pointing backwards, and each one terminating in a brush or collection of bristly points.

Length of the male, 12 to 13 inches—weight 29oz—of a female, 20 oz. Expanse of wings upwards of 4 feet.

When disturbed during the day, they fly slowly round and round, with a low screaming noise, and soon settle again; hovering for a moment over a bough, they catch suddenly with the claw at the angle of the wing, and, allowing the body to drop, they swing with a single hold. They vary considerably in shade and colour.

4.—*Pteropus* (*Cynopterus*) *Marginatus*, Fr. Cuvier.—*Pteropus Marginatus*, Temminck; *Monog. de Mam*, I. 202.

Length, $4\frac{1}{2}$ inch. Weight, 2oz. a male.

The dentition agrees with the statement of Fr. Cuvier, which he adopts as the character of his genus *Cynopterus*.

Incisors $\frac{4}{4}$ canines $\frac{1}{1}$ $\frac{1}{1}$ molars $\frac{4}{5}$ $\frac{4}{5}$ = 30. Is somewhat rare; found in clusters on the folded leaves of the plantain, the palmyra, &c.

5.—*Vespertilio* (*Megaderma*) *Carnatica* ?—New species? *M. lyra* ?

General name for all bats, *Kankapati*, Can. ಕಂಖಕಪಟಿ
Chamgidar, Dekh................ ..... چمگیدر
Shab parak, Do..... .... شب پرک

This species differs from the dentition commonly assigned to *Megaderma*, in having incisors $\frac{0}{4}$ canines $\frac{1}{1}$ $\frac{1}{1}$ molars $\frac{3}{5}$ $\frac{3}{5}$ = 24; whereas the molars according to Geoffroy are $\frac{4}{5}$ $\frac{4}{5}$.

Above, mouse colour; beneath, paler. Nasal appendage large, oblong, reaching to the base of the ears, with a plait or fold down in the centre. Oreillon cordate, the anterior lobe high and pointed, the posterior rounded; the muzzle truncate, the under lip cleft. Four mammæ. Female generally larger.*

	Female.	*Male.*
Length	$3\frac{1}{2}$ inches	3 inches.
Expansion of wings	$19\frac{1}{2}$	18
Ear (behind)	$1\frac{2}{10}$	

* Temminck states that the females and young of some bats live apart from the males at certain seasons, which may account for this. Mon. de mam. Tom. ii. p, 5.

Ear (before)	$1\frac{4}{10}$
Carpus	$2\frac{1}{2}$
Tarsus	1 $3\frac{1}{2}$-10ths.
Head	$1\frac{1}{2}$
Additional length of the interfemoral membrane	$1\frac{1}{2}$
Weight	1oz. 10drs..........1oz. 3drs. 10 grs.

These were the largest dimensions ascertained from 14 females and 7 males, obtained at various times. They are common in the Mulnad, in old temples, caves, &c.

6.—*Vespertilio (Rhinopoma) Hardwickii.*

Weight....10 drs. Male.. 8 drs. 13 grs. Female.

Length of body.......... $2\frac{6}{10}$ inches.

——— tail... ... . $2\frac{5}{10}$

$5\frac{1}{10}$

——— carpus $2\frac{4}{10}$

——— tarsus $2\frac{5}{10}$

Expanse of wings...13.

This is probably the species already described by General Hardwicke, but the means are not at hand of verifying his description.

This species has the muzzle long, thick, truncated and surmounted with a small leaf. Oreillon oblong, bi-acuminated; forehead concave, with a fossa or channel running down the centre. The nostrils are placed in the truncated plane of the muzzle, being covered with a membrane slit transversely, and with a small round puncture in the middle of the slit. By means of this apparatus the animal is enabled to open or shut its nostrils at pleasure. The leaf-like process rises from the same plane of the muzzle. Found in old ruins to the eastward of the province.

Rhinolophus, Geoff.

This, and the two following species, seem to form a subdivision of the section *Rhinolophus* (Geoffroy), differing in the number of teeth and having in common a remarkable peculiarity common to all, not included in his specific characters, which may be described as a circular cavity, or sac, behind the nasal crest. This cavity the animal can turn out at pleasure, like the finger of a glove; it is lined with a pencil of stiff hairs, and secretes a yellow substance like wax. When alarmed, the animal opens this cavity and blows it out, during which it is protruded and withdrawn at each breathing. Temminck notices it under the name of a syphon, or purse in *R. Insignis* and *Speoris.*

Dentition, incisors $\frac{2}{4}$; canines $\frac{1}{1}\frac{1}{1}$; molars $\frac{4}{5}\frac{4}{5}$ 28; whereas in Geoffroy's group the molars are $\frac{5}{5}\frac{5}{5}$, and the total number 30. But Temminck makes them vary from $\frac{4}{5}$ to $\frac{5}{6}$. The upper incisors are distant, placed near the canines and triangular, broad at the edge and sloping back to the root, the lower ones are close together, crenelate at the edge, each having three points. In all other respects, the characters are the same as *Rhinolophus*. Nose furnished with a complicated crest. Ears distinct, marked with transverse distant wrinkles. Interfemoral membrane large. Warts on the pubes.

7.—*Rhinolophus Speoris ?*—*R. Crumenifere*, Peron.—*R. Marsupialis*, Geoff.—*R. Dukhunensis*, Sykes.

Ears large, erect, acuminate, rounded to the base. Muzzle short, crest very complicated, consisting of a simple transverse membrane, or leaf extending between the eyes, behind which is the circular sac. In front is a cavity, in which are pierced the complicated nostrils, and surrounded by another smaller membrane; the upper portion next the frontal leaf thick and fleshy, the lower, above the lip, fine. On either side without this are three smaller parallel membranes or fringes, reaching from the eyes downwards. Body short, thick, of a light mouse colour. Interfemoral membrane, narrow, square, including the tail, which consists of about four joints, the half of the last joint being free at the point. Pubes naked, large, with one or two warts. Two pectoral mammæ, two inginual.* Females with the frontal sac less developed.

On a comparison of about 18 specimens, the measurement of the largest was—

	Male.	Female.
Length	$2\frac{3}{10}$ inches	$2\frac{2}{10}$
—— of tail	1	1
Total	$3\frac{3}{10}$	$3\frac{2}{10}$
—— of exserted portion of tail	$1\frac{1}{2}$-10ths.	
—— of ear	$\frac{6}{10}$	
—— of carpus	2	
—— of tarsus	$\frac{9}{10}$	
Expansion of wings	13	$12\frac{1}{2}$
Weight	6 drs. 13 grs.	6 drs.

Found in old buildings, wells, &c.

The *Dukhunensis* of Sykes is said to differ from *Speoris* in the length of the carpus, but in Temminck, Monog. de Mam. T. II. p.17, the fore arm

* Whether the latter are false or real is doubtful. It has been said they have no lacteal glands, but I have constantly remarked them, and that they are smaller in the young female.

is stated to be shorter than the whole length, and the difference of colour is not sufficient to constitute a specific difference.

8.—*Rhinolophus Murinus.*—New Species.

Ears large, erect, rounded; muzzle short, with a tranverse frontal leaf or membrane, and the sac behind it as the last, and in front a simple membrane round the nostrils. Body short, and thick. Interfemoral membrane large, including the tail, all but the extreme tip. Pubes small covered. Mammæ as in the preceding, colour dusky brown, paler beneath.

Male.—Length $1\frac{9}{10}$; tail $1\frac{2}{10}$—$3\frac{1}{10}$; ear $\frac{7}{10}$; carpus $1\frac{6}{10}$; tarsus, barely $\frac{8}{10}$; expansion of wings $10\frac{1}{2}$; weight 4 drs. 20grs.—The sexes nearly alike.

9.—*Rhinolophus fulgens.*—New Species.

This resembles the last in every respect, but the membranes of the crest are more developed. Colour a bright fawn above, and golden beneath. Membrane of the wings blackish.

Length $1\frac{9}{10}$; tail $\frac{9}{10}$—$2\frac{8}{10}$; ear $\frac{7}{10}$; carpus $1\frac{6}{10}$; tarsus barely $\frac{6}{10}$; expansion of wings $10\frac{1}{2}$; weight 4 drs. 24 grs.

Very rare. The above is the description of an adult male.

It cannot be identified with the *R. larvatus* of Horsfield, which it resembles in colour, because it (the *Larvatus*), has the complicated crest and dimensions of *Speoris*.

10.—*Taphozous* ———.

Of this only one specimen was obtained of which the description has been lost.

Vespertilio Proper.

Two small species are common, but neither of them have been identified.

11.—*Vespertilio* ———.

Ears small, sub-triangular, shorter than the head; oreillon oblong, rounded, colour above pale dusky brown, beneath lighter.

Length 2 inches; tail $\frac{7}{10}$—$2\frac{7}{10}$; carpus $1\frac{3}{10}$; expansion of wings 10 inches.

12.—*Vespertilio* ———.

Smaller than the last. Ears larger, rounded, nearly as long as the head. Oreillon curved and rounded at the end. Colour dark brown above and below.

Length $1\frac{6}{10}$; tail $\frac{7}{10}$—$2\frac{1}{10}$; carpus 1 ; expansion of wings $7\frac{3}{4}$.

13.—*Sorex Indicus*, Geoff.

Sondeli, Canarese........ ....ಸಂಡೆಲಿ
Chachundar, Dukhani................ چهچهوندر

14.—*Ursus* (*Prochilus*) *Labiatus.*—*Ursus Labiatus*, Blainville.

Kaddi, Karadi, Canarese ....ಕರಡಿ
Rinch, Dukhani ....ريچهه
Aswal, Mahratta............

The peculiar dentition of this animal, distinguishing it from Gen. *Ursus*, has been remarked by Colonel Sykes. There are never more than 4 incisors in the upper jaw. I possess several crania, one of them with the milk teeth just giving way to the adult ones, all agreeing in this peculiarity. Their food seems to be black ants, termites, beetles, fruit, particularly the seed of the *Cassia fistula*, of the date tree, &c., honey. When pursued, they carry their cubs on their back. In 1833 a bear was chased and killed, having carried her two cubs in this manner nearly three miles. It appears to be a long-lived animal. Instances are known of their living in a state of captivity for 40 years.

15.—*Lutra Nair*, Fr. Cuvier.

Nirnai, Canarese, (literally " water dog.") ನೀರ್ನಾಯಿ
Datwai bekk Do. of the Wuddar tribe......ದಾಟುವ ಬೆಕ್ಕು
Pani kutta, Dukhani, (literally "water dog") پاني کتا

Hud or Hada, Mahratta of the Ghats.
Jalmanus and Jal manjar, Mahratta...

16.—*Canis Familiaris*, (*wild variety*).—*Canis Dukhunensis* of Sykes.
Jungli Kutta............Dukhani............ جنگلي کتا

The wild dog was not known in the Southern Mahratta Country until of late years. It has now become very common. The circumstance of their attacking in a body and killing the tiger, is universally believed by the natives. Instances of their killing the wild boar, and of tigers leaving a jungle in which a pack of wild dogs had taken up their quarters, have come to my own knowledge ; and on one occasion a party of the officers of the 18th regiment, M. N. I. saw a pack run into, and kill, a large Sambar stag near Dharwar. I once captured a bitch and seven cubs of this species, and had them alive for some time.

17.—*Canis Lupus*, Lin.

To'a..............Canarese.............. ತೋಳ
Landgah..........Dukhani... .... لانڈگا

This species does not appear to differ from the common wolf. Three young ones which I had alive for some time agreed very much with the description of the *Canis pallipes* of Colonel Sykes, but several adults that I shot differed in their colours and general character. The head was large, the muzzle thicker, the colours in some cases more inclining to rufous, particularly on the fore legs: which in some cases were deep red; and the same colour was found on the muzzle from the eyes to the nose. Others have more rufous on the hind legs, together with some black on the thighs, rump, and tip of the tail.

Length from muzzle to insertion of tail 36 to 37 inches: do. of tail 16 to 17½; height at shoulder 24 to 26; length of head 10; circumference of do. 16 to 17; weight of an adult female 42 lbs.

The wolves of the Southern Mahratta Country generally hunt in packs, and I have seen them in full chase after the goat antelope (*Gazella Arabica*). They likewise steal round the herd of *Antelope Cervicapra*, and conceal themselves on different sides till an opportunity offers of seizing one of them unawares, as they approach, whilst grazing, to one or other of their hidden assailants. On one occasion, three wolves were seen to chace a herd of gazelle across a ravine, in which two others were lying in wait. They succeeded in seizing a female gazelle which was taken from them. They have frequently been seen to course and run down hares and foxes; and it is a common belief of the ryots that in the open plains, where there is no cover or concealment, they scrape a hole in the earth, in which one of the pack lies down and remains hid, while the others drive the herd of antelope over him. Their chief prey however is sheep, and the shepherds say that part of the pack attack and keep the dogs in play, while others carry off their prey; and that, if pursued, they follow the same plan, part turning and checking the dogs' while the rest drag away the carcass, till they evade pursuit. Instances are not uncommon of their attacking man. In 1824 upwards of 30 children were devoured by wolves in the Purgunnah of Rone. Sometimes a large wolf is seen to seek his prey singly. These are called *won-tola*, and reckoned particularly fierce.

18.—*Canis Aureus*, Lin.

Nari...............Canarese...... ನರಿ
Kolah...............Dukhani...... کولا
Shighal...... ...... do......... شغال

The native sportsmen universally believe that an old jackal, which they call *bhalu*, is in constant attendance on the tiger, and whenever his cry is heard, which is peculiar and different from that of the jackal generally, the vicinity of a tiger is confidently pronounced. I have heard the cry attributed to the *bhalu* frequently.

19.—*Canis Bengalensis*, Shaw and Pennant.—*C. Kokree*, Sykes.

Konk .... Canarese ...... ಕೊಂಕ್
Kemp nari (red jackal) do. ..... ಕೆಂಪ್ನರಿ
Chandak nari .... do. ..... ಚಂದಕ್ನರಿ
Lomri, Nomri .... Dukhani....... لومڑي
Kokri .... Mahratta ......

Length from nose to insertion of tail 20 inches ; do. of tail 14 in. ; weight, male $7\frac{1}{4}$ lb. ; female, $6\frac{1}{4}$ lb.—both large specimens.

Shaw's animal appears to be identical with the *Canis Kokree* of Colonel Sykes. Its principal food is rats, land crabs, grasshoppers, beetles, &c. On one occasion a half devoured mango was found in the stomach. It always burrows in open plains, runs with great speed, doubling like a hare; but instead of stretching out at first like that animal, and trusting to its turns as a last resource, the fox turns more at first and if it can fatigue the dogs, it then goes strait away. It is remarkable that though the brush is generally tipt with black, a white one is occasionally found, while in other parts of India, as in Cutch, the tip is always white.

20.—*Viverra Indica*, Geoff.—*Rasse*, Horsfield.

Punagin bekk .... Canarese. ...... ಪುನಗಿನ್ ಬೆಕ್ಕು
Mushak billi .... Dukhani... ..... مشک بلي
Kasturi .... Mahratta.. .....

Length from the nose to insertion of tail 22 inches ; do. of tail $15\frac{3}{4}$ in. —total $37\frac{3}{4}$—weight $5\frac{1}{2}$ lb.—an adult female.

Varies much in the distribution of the marks on the fur. Specimens from the Southern Mahratta Country illustrative of this variety have been deposited in the British Museum.

21.—*Mangusta Mungos.*—*Herpestes Griseus*, Desm.

Mungli .... Canarese.. ...... ಮುಂಗಲಿ
Mangoos .... Dukhani... ...... منگوس

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There does not appear to be any difference between the *Mangusta Mungo* and *Mangusta Cafra*, both of which are referrible to the *Herpestes griseus* of Desmarest.

22.—*Mangusta Vitticollis.—Herpestes Vitticollis*, Bennett, Proceed. Zool. Soc. 1835, Part iii. p. 67.

A specimen of this animal was procured in the thickest part of the ghat forests by accident, in 1829, and is now deposited in the British Museum. It is very rare, inhabits only the thickest wood, and its habits are little known. Size the same as *M. Grisea*.

As the animal has never been figured, a drawing is given.

23.—*Paradoxurus Typus.*—Fr. Cuv.

Kera Bek, ... Can......... ಕೆರೆ ಬೆಕ್ಕು

Menuri, ... Dekh........ منوري

Common in the Mulnad, living in trees, thatched roofs of houses and huts, &c.

Dimensions.

Male.	Ft.	inch.	Female.	Ft.	inch.
Length of body..	1	10½		1	$5\frac{7}{10}$
Do. tail........	1	7½		1	6
	3	6		2	$11\frac{7}{10}$

Length of head..........	$5\frac{8}{10}$	$5\frac{6}{10}$
Do. ear..........	$1\frac{8}{10}$	$1\frac{7}{10}$
Distance between the ears	$\cdot3\frac{7}{10}$	
Length of sole of fore foot	$2\frac{4}{10}$	$1\frac{9}{10}$
Do. do. hind do.	$3\frac{1}{10}$	$2\frac{6}{10}$
Weight................	8½ lbs.	5¾ lbs.

24.—*Hyœna vulgaris.*

Kirba................Canarese.. ...... ಕಿರಬ

Kutt kirba............ do.... ......ಕತ್ತೆ ಕಿರಬ

Taras.... ....Dakhani.......... ترس

Length from nose to insertion of tail 3 ft. 6 in.; do. of tail 1 ft. 5 in. —total 4 ft. 11 in.; do. of head 1 ft. 10 in.; circumference of do. 1 ft. 8½ in.; weight 74 lb.

25.—*Felis Tigris*, Lin.

Huli, Canarese .... ಹುಲಿ

Bagh, Dukhani .... باگهه

Patayat Bag, do. .... پتایت باگهه

Wāhag, Mahratta...... ....

The tiger is common over the whole district, breeding in the forest and mountain tracts, and coming into the open country when the grain is on the ground. In some places they do much mischief, and have been even known to carry off the inhabitants out of the villages, whilst sleeping in their verandahs during the night.

The following are the largest dimentions of any tiger, male and female, killed in the Southern Mahratta Country, between the years 1829 and 1833 inclusive, and in affording a comparison of from 70 to 80 individuals.

	Adu't Male.		*Do.*		*Adult Female.*		*Do.*	
	ft.	in.	ft.	in	ft.	in.	ft.	in.
Length from nose to insertion of tail	6	2	5	6....	5	3½	5	2
—— of tail..............................	3	1½	3	3....	2	11	3	2
Total......	9	3½	8	9....	8	2½	8	4
Height at the shoulder............	3	2	3	0....	2	9	2	9
Length from top of shoulder to end of toes....................	3	7¾	3	7....	3	2½	"	"
—— from the elbow to the extremity of the toes............	1	10	"	"....	1	8¾	"	"
Circumference behind the shoulder	4	3	3	11¼..	3	6	"	"
—— of the forearm below the elbow	1	8	1	7....	1	2¾	"	"
—— of the neck.......	2	8	2	10½..	2	1½	"	"
—— of the head	2	9	3	1....	2	3	"	"
—— of forearm above the elbow....	2	3	"	".....	"	"	"	"
Weight..........................	380 lbs.		360 lbs..		249 lbs.			

I have been thus particular in detailing the measurements of this species, because nothing is more common than to hear of tigers of 12, 14, and even 15 feet in length. Most persons content themselves with measuring the skin of an animal after it is taken off; and I once measured a lion of 9 feet 4 inches, which was noted by another of the party in his journal, as 11 feet; and by a third as 12—the one having measured the skin newly taken off and pulled out, the other when it was stretched to the uttermost by pegs, to dry. I do not believe that any tiger has ever been known that would exceed ten feet.

The following particulars relative to the habits of the tiger were collected during several years.

The female has from 2 to 4 young, and does not breed at any particular season. Their chief prey is cattle, but they also catch the wild hog, the *sambar*, and, more rarely, the spotted deer. It is naturally a cowardly animal and always retreats from opposition until wounded or provoked. Several instances came to notice of its being compelled to relinquish its prey by the cattle in a body driving it off. In one case an official report was made of a herd of buffaloes rushing on a tiger that had seized the herd-boy and forcing it to drop him. Its retiring from the wild dog has already been adverted to. Though the wild hog often becomes its prey, it sometimes falls a victim to the successful resistance of the wild boar. I once found a full grown tiger newly killed, evidently by the rip of a boar's tusk; and two similar instances were related to me, by gentlemen who had witnessed them, one of a tiger the other of a panther. It is generally believed that a tiger always kills his own food and will not eat carrion. I met with one instance of a tigress and two full grown cubs devouring a bullock that had died of disease. I saw the carcass in the evening, and next day, on the report of tigers having been heard in the night, I followed their track, and found they had dragged the dead animal into the centre of a corn-field and picked the bones quite clean, after which they found a buffalo, killed it, and eat only a small portion of it. Another instance was related in a letter from a celebrated sportsman in Kandeish, who having killed a tigress, on his return to his tents, sent a pad elephant to bring it home. The messenger returned reporting that on his arrival he found her alive. They went out next morning to the spot and discovered that she had been dragged into a ravine by another tiger and half the carcass devoured. They found him close by and killed him also.

The Bheels in Kandeish say, that in the monsoon, when food is scarce, the tiger feeds on frogs, and an instance occurred some years ago, in that province, of one being killed in a state of extreme emaciation, from a porcupine's quill that had passed through his gullett and prevented his swallowing, and which had probably been planted there, in his attempts to make one of these animals his prey.

Many superstitious ideas prevail among the natives regarding the tiger. They imagine that an additional lobe is added to his liver every year; that his flesh possesses many medicinal qualities; that his claws arranged together so as to form a circle, and hung round a childs neck, preserves it from the effect of the evil eye. That the whiskers constitute a deadly poison, which for this reason are carefully burnt off, the instant the animal is killed. Several of the lower castes eat his flesh.

26.—*Felis Pardus*, Lin.

Of this species there appear to be two varieties, a large and a small kind, though others are of opinion, that the smaller animal is the leopard.* The natives distinctly recognize the two kinds by different names.†

The large variety—*Honiga*, Canarese....ಹೊಂನಿಗ
Tendwa, Dakhani....تیندوا
Tendowa, of the Bauris or chita catchers.
Asnea, Mahratta of the Ghats.
The smaller one—*Kerkal*, Canarese .....ಕೆರ್ಕಲ್
Gorbacha, Dukhani..... گور بچه
Bibla, of the Bauris.

The most remarkable difference between these seems to be that of size, but on a careful inspection, other particulars are detected.

An examination of a large collection of skins, that had been brought for the Government reward, and were deposited in the office of the district, gave the following characters. The larger skins measured from $4\frac{1}{2}$ to 5 feet; the tail $2\frac{3}{4}-7\frac{3}{4}$; the height appeared to be $2\frac{1}{2}$; the smaller ones were 3 to $3\frac{1}{2}$ ft. long; the tail $2\frac{1}{2}$—6; the height was from $1\frac{1}{2}$ to 2.

The colour of the larger skins was generally pale fulvous yellow, the belly white, whilst others were deeper and more tawny, some being a sort of reddish yellow, without any white at all, beneath. In the *Kerkal* there is also a great variety of shade. But generally a greater number of *Honigas* are pale coloured and of the *Kerkals* dark; whence probably the name of the latter from *kera*, dark or black. As a general rule too, the fur of the *Honiga* is shorter and closer, that of the *Kerkal* longer and looser. The character of the spots is always the same. They may be characterised as imperfect annuli, consisting of groups of spots, arranged in imperfect circles; but sometimes approximating more and becoming like trifoils ·.·, squares : :, or like the impression of a dog's foot, particularly along the dorsal line, and on the head, neck, shoulders, loins and legs. Where the ground colour is dark, the spots are more confused. The tail is without annuli, spotted throughout, but sometimes the spots run into each other at the end, giving the appearance of a black tip.

* Col. Sykes also distinguishes two kinds of *cheta*, but considers the larger one to be the leopard.

† Shaw says, the leopard is distinguished from the panther by its paler yellow colour, and again that the leopard is considerably the smaller of the two. Here the paler is the larger.

The large variety is found chiefly among the rocky hills to the eastward, the smaller is more common in the wooded country of the Mulnad. The former is a taller, slighter, more active animal, exceedingly strong and fierce, the latter is smaller, and stouter, and varies much in size, some being not bigger than a large tiger-cat, though the skull proved them to be adult animals. The latter may be killed easily, while the *Honiga* is a very formidable assailant ; and several instances occurred of as many as four men having been killed by one, before it was put *hors de combat.*

The strongest marked difference of character that I observed, was in the skulls, that of the *Honiga* being longer and more pointed, with a ridge running along the occiput, and much developed, for the attachment of the muscles of the neck—while those of the *kerkal* were rounder and the bony ridge was wanting. If this character is universal and permanent, it will afford a good ground of distinction.

At present I should be disposed to consider the Indian species as consisting of three varieties :

(*a.*) The larger or *Honiga.*

(*b.*) Ditto of a uniform black colour, the spots appearing when the light shines strongly on the skin, from the Malabar Coast.

(*c.*) The smaller variety or *kerkal.*

The following are the dimensions of a very large *honiga* killed in the *Mulnad* : length of body from nose to insertion of tail 4 ft. 6 in. tail 3-2 ; in all, 7-8 ; height at the shoulder 2ft. 3½in. from ends of toes to top of shoulder 2—7 ; circumference of the arm below the elbow 1-3 ; head 1-11.

This was a very large male called by the natives a *Mar honiga,* stouter than the generality of the larger kind.

27.—*Felis Jubata,* Lin.

Chircha, Chirtsa...Canarese.............. ಚಿರ್ಚ ಚಿರ್ತ

Siwungi, do. .... ಶಿವಂಗಿ

Chita, Dakhani.......................... چيتا

Yuz, Hindustani of the trainers............. یوز

They are caught in the district and trained to kill the *Antelope cervi capra.* They are taught always to single out the buck, which is generally the last in the herd ; the *Meer Shikars* are unwilling to slip until they get the herd to run across them, when they drive on the cart, and unhood the *cheeta.*

28.—*Felis Chaus*, Gould.—*Felis Affinis*, Gray,

Maut Bek	Canarese.............	ಮಾರೆಬೆಕ್ಕು
Kadu bek or *Kar bek*..	Do. of the Waddar caste	ಕಾಡುಬೆಕ್ಕು
Bella bek	who eat them......	ಬೆಲ್ಲಬೆಕ್ಕು
Jangli billi	Dakhani.............	جنگلي بلي
Bhaoga	Mahratta of Ghats......	

From an examination of a number of skins deposited by me in the British Museum, Mr. Gray seems to consider the *Affinis* to be identical with *Chaus*.

29.—*Felis.*———. *Wagati*, Mahratta of the Ghats.

This animal I was unable to identify with any of the species described, so it may perhaps be a new one. It seems to differ both in size and colour from the *Felis Viverrinus* sent home by Mr. Heath, and described by Mr. Bennet.* It is peculiar to the western ghat forests. It approaches most nearly to the *Felis Tigrina* or *Margay, Gm.*; the *Felis Javanensis* or *Kuwuk*, Horsf.; and the *Felis Diardi*.

The *Wagati* (an adult male) is 26 inches long, from the muzzle to the insertion of the tail, which is nearly 11 more—in all nearly 37 inches. The colour is pale yellowish grey—darker on the back—yellowish white or pale yellow on the sides—white on the under parts of the body. The forehead has 4 longitudinal spots. In a line with these, from the vertex, four lines run to the shoulders, the outer broader, the centre ones narrower, and these two last are continued almost uninterruptedly to the tail; the others break diagonally into large longitudinal spots, which are continued in rows of smaller rounder spots to the centre of the belly. There are about six rows on each side, exclusive of the two dorsal lines. Two smaller bands run from the eye, and along the upper lip, to a throat-band running transversely below the ears. Two other similar transverse bands cross the breast with a row of spots between. The inside of the arm has two broad bands, and the soles are dark brown or nearly black. The tail is spotted on the upper half and indistinctly annulate towards the tip. It is very fierce—living in trees in the thick forests; and preying on birds and small quadrupeds. A *shikaree* declared that it drops on larger animals, and even on deer, and eats its way into the neck; that the animal in vain endeavours to roll or shake it off, and at last is destroyed.

* Proceed. Zool. Soc. 1833, Part I. p. 68.

(To be continued.)——

V.—*Some Account, Historical, Geographical and Statistical, of the Ceded Districts.—By Lieutenant* Newbold, A. D. C. *to General* Wilson, C. B. *commanding the Ceded Districts Division of the Madras Army.*

Geographical position and artificial divisions.—The Ceded Districts are situated nearly in the centre of Peninsular India, between the 13th and 17th degrees of north latitude, and the 76th and 80th east longitude. They comprize an area, in no part touching on the sea coast, of about 235 miles long from east to west, and about 195 broad from north to south. The superficial extent, not including the Kurnool and Sondur territories, amounts to 23,557 square miles of which about one-third is under cultivation. Though constituting a single military division, under command of a general officer, they are divided into two distinct collectorates, viz. the western portion, termed Bellary, and the eastern, termed Cuddapah. The former has an area of 13,056 square miles, and is subdivided into 17 taluks or provinces; the latter with an area of 10,501 square miles contains 16 taluks—viz.

BELLARY.		CUDDAPAH.	
1 Adoni.	10 Kudlighi.	1 Banaganpully.	9 Gurrumcondah.
2 Bellary.	11 Kumply.	2 Budwail.	10 Jummulmudgoo.
3 Durmaveram.	12 Mudducksera.	3 Camlapur.	11 Koilcoontla.
4 Gooleum.	13 Pennaconda.	4 Chinnur.	12 Muddenpilly.
5 Gooty.	14 Punchapollem.	5 Chitwail.	13 Poolvendla.
6 Harponhully.	15 Raidroog.	6 Cummum.	14 Punganur.
7 Hovin Hudgully.	16 Tarputtri.	7 Doopaud.	15 Raichooty.
8 Hundi Anantapur.	17 Yadaki.	8 Doovoor.	16 Sidhout.
9 Kodikonda.			

Each taluk is subdivided into more minute divisions, containing a certain number of villages, the total of which is 14,969. To each collectorate is appointed a principal collector of revenue, uniting to this office the functions of a magistrate; and a sub-collector, with one or two assistants. In the judicial department a judge and register. The whole of the above are European civil servants of the Company. Over each taluk is a local native collector, termed a tahsildar, who resides generally in the kusbah or capital town of the taluk. Under the judges are 15 district native assistants munsifs, two muftis at the zillah courts of Bellary and Cuddapah, and two pundits. Over each village are potails or hereditary headmen.

As a military division the Ceded Districts have two cantonments, viz. Bellary and Cuddapah, and two small stations occupied by detachments, viz. Gooty and Cummum. The division headquarters is usually at Bellary, where a native cavalry corps, a regiment of Queen's infantry, a company of European foot artillery, and two regiments of native infantry, are usually cantoned. It was recommended as a military post by Sir T. Munro in 1802, during the disturbances at Raichoor, in order to curb the unruly Poligars, to be a check on the Nabob of Kurnool, and to overawe the petty zemindars residing in the

Nizam's dominions between the Tumbuddra and Kistnah rivers, which from the distance from Hyderabad had always been a disturbed district, and entirely beyond the control of the Nizam. One regiment of native infantry is stationed at Cuddapah, and from these two principal stations two companies of native infantry are detached to Gooty, and one to Cummum.

Boundaries.—The boundaries of the Ceded Districts (including Kurnool) on the north are the Tumbuddra and Kistnah rivers, separating the districts from the territories of His Highness the Nizam; the latter river also divides them from a portion of Guntoor; on the south they are bounded by Mysore and northern Arcot; on the east, Nellore, and on the west by the Southern Mahratta Country, and a portion of the Nizam's dominions; the Tumbuddra here forming the line of demarcation.

Historical Sketch.—The Ceded Districts of the Balaghat, a compound word signifying a tract on the summit of the mountains, anciently formed part of the Hindu empire of Bijanugger, situated in the Carnatic. This old Hindu geographical division originally comprised the whole of the vast plateau in Southern India situated above the eastern and western ghats, but has been misapplied by modern writers to the tract along the eastern coast, in consequence of its being under the nominal or real sway of the Hindu rulers of the Carnata. It is a well known historical fact, that the site on which the present city and fort of Madras stands was ceded to us by one of the later sovereigns of the Carnata, Sri Rung Rayel, a fugitive from his capital of Bijanugger, and then residing (1693 A. D.) at Chunderghiri, a place to the N. W. of Madras. The existence of the Bijanugger empire can be traced as far back as the commencement of the 14th century of the Christian era, and comprized within its limits the capital of the Hindu princes (vide Bijanugger); while the rule of the Chitwail Rajas extended over the wild and jungly belts of the eastern frontier. After the defeat of Ram Raj, on the plains of Talicota, by the four Mussulman sovereigns of the Deccan (A. D. 1564) the Ceded Districts fell under the sway of the Bijapore and Golconda princes; and, about 1689 A. D., under that of the wily Aurungzebe. After the demise of this monarch in 1707 A. D., and on the consequent decline of the Mogul empire, most of this part of India was annexed to the dominions of the Nizam ul Mulk of Hyderabad, from whom it was won in several hard-fought campaigns by Hyder Ali, between the years 1767 and 1780. By the treaty of 1792, the Nizam obtained, as his share of Tippoo's dominions, that part of the Ceded Districts extending from the Kistnah beyond the Pennaur river, including the forts of Cuddapah and Gundicota: the British, the Baramahl, the

Sultan's possessions on the Malabar coast and the lower ghats. On the fall of Tippoo in 1799, the Nizam acquired the districts about Gooty and Gurrumcondah, and the tract of country around Colar, Nundidroog, Chittledroog, and Sera, the British retaining the forts. To the Mahrattas were to be allotted, among other districts, upper Soonda, Annagundi, Harponhully, and part of Chittledroog and Bednore, on certain stipulations. On the 12th October 1800, the British government concluded a new treaty with their late ally the Nizam, by which he ceded to the Company all the territory of the Balaghat south of the Kistnah and Tumbuddra rivers, and in short the whole of the possessions he had acquired by the treaty of Seringapatam, dated 18th March 1792, and by that of Mysore on 22d June 1799. The taluk of Adoni, which had been held in jaghire from the Nizam by the son of Muhabet Jung, was given up to the English in lieu of the fortresses of Copal-droog and Gujanderghur on the northern side of the Tumbuddra. Part of Gudipet and two-thirds of Punganoor were subsequently exchanged for some of the territories that had been set apart as the conditional share in the spoil of the Peshwa, in case he acquiesced in the British arbitration of the differences existing between himself and the Nizam, and in the exemption of the latter from the payment of that odious tribute, the chout. These conditions were not acceded to by the Peshwa, and the reserved territories were divided by the Nizam and the British in the proportion of two-thirds to the former. In return for the districts thus ceded, the British government, among other things, agreed to defend the Nizam from hostile aggression, both external and internal; a regiment of native cavalry and two of native infantry were added to the subsidiary force, which increased it to 1,000 horse 8,000 foot, and a detachment of artillery. The cession of territory was made ostensibly to guarantee to us by its revenue, valued in the schedule at 17,58,000 pagodas, the regular payment of the expense of the troops placed at the Nizam's disposal; or, to use a native expression, as a *tunkah*, in lieu of upwards of two lacs of rupees (or Arcot rupees 24,17,100 annually) paid in monthly by him for the support of six infantry battalions, a proportion of artillery and a cavalry regiment, the subsidiary force of 1798. Banaganpully was continued in Jaghire to Assad Ali, Sondur to the Peshwa, and Kurnool, after paying its annual peshkush for two years to the Nizam, was finally to be transferred to the Company.

The collection of the revenue and civil administration of the Ceded Districts was first entrusted to the able management of that sound and practical statesman, Sir Thomas, then Major, Munro, who found the country in a state of anarchy and misery, arising from the mal-administration and negligence of the Nizam's officers. Proceeding on the so-

called "permanent system" they had carelessly confided the collection of the revenue to numerous petty Poligar zemindars, brought up in a lawless country, which, since the expulsion of its Hindu sovereigns, had been shattered by repeated foreign invasions, and torn by domestic broils: on one side tyranny and rapacity prevailed, on the other a determined obstinacy in withholding the sircar dues, either by fraud or corruption, or, when strong enough, by open resistance. The authority of the Nizam was set at nought by all parties. His own soldiery wrested their arrears of pay with interest from the villages on which they were billeted; while upwards of eighty Poligars, with about thirty thousand armed followers, occupying the forts and walled villages, were engaged in endless and bloody feuds with each other. Bands of robbers pillaged with impunity; and, in short, murder and rapine stalked triumphant throughout this war-stricken land. But the master-hand was upon it. Under the vigorus measures of Munro, the disorderly soldiery of the Nizam was expelled within three months; and before a year had rolled on the most refractory of the contumacious Poligars, whom neither the Delhi viceroys, the Mahrattas, the Nizam, nor Hyder and Tippoo, could keep in subjection, were either reduced to obedience or compelled to quit the country. Order being at last restored, this excellent public servant, after a laborious investigation into the land tenures, and such of the revenue accounts as had escaped destruction, lost no time in laying the foundation of that admirable system of revenue, known under the term royetwar, which still exists under some modification. This he found the more easy to do, inasmuch as the ancient Hindu sovereigns of the Ceded Districts, like the Malayan princes of the Indian Archipelago, and the chiefs of other ultra gangetic nations, had always been considered as lords of the soil: consequently all lands, with the exception of some that had been given away in *enaum*, reverted to Government.

It has been said that the race of Poligars first sprang up between the fall of Bijanugger and the reign of Aurungzebe: but they existed long previous to this period, and often proved rebellious vassals to their liege lords, the Hindu princes of Bijanugger, to whom they paid peshkush. Among the most powerful were ranked the chiefs of Anantapur, Raidroog, Auk, Punganoor, Harponhully, Gurrumcondah, Ghuttu and Bellary; the three first are said to have formerly held the great offices of state under the Hindu administration, and to have been presented with land in jaghire in order to enable them to support their official dignities. The descendants of the Hindu sovereigns, who for many generations had been permitted to retain Annagundi, and some other places, in jaghire from their Mahomedan conquerors, remained in quiet obscurity, residing principally at Camlapur in the suburbs of the ruined capital of their ancestors, and at Pennaconda, indulging the firm hope, founded upon an old Hindu

prophecy, that they will one day regain the lost possessions of the family. The next of kin, a young boy about 10 years of age, resides at present in Annagundi under the care of the Dalwai, or hereditary prime minister, enjoying a handsome pension of 16,532 rupees per annum, and the revenue of a few villages, from the British government; also of certain districts on the north bank of the Tumbuddra from the Nizam. The descendants of the Harponhully, Raidroog, Punganoor and other chiefs are likewise handsomely pensioned. The Nabob of Kurnool pays an annual peshkush for his dominions of 80,000 Company's rupees. It was settled at a lac; but, in consequence of the difference of coins, amounts only to the sum just specified.

Physical aspect.—A considerable diversity exists in the physical aspect of the country. The general character however is that of an extensive plateau elevated on the shoulders of the western and eastern ghats, the plain of which forms a considerable angle with the horizon, inclining towards the eastern coast of the peninsula. For instance, we find the height of the plain east of the western ghats at Belgaum in the Southern Mahratta Country to be 2,500 feet above the level of the sea—at Bellary 1,600 feet; the average of the plain east of Bellary and Gooty 1,182 feet—proceeding easterly to Cuddapah 507 feet, and the average on the eastern limit of the district 450 feet. The western ghats clearly form the anticlinal line, to which the arenaceous and schistous eastern ranges are more or less conformable. The plain has another and more gentle dip towards the north, viz. to the beds of the Kistnah and Tumbuddra, rising southerly as it passes the frontier to Nundidroog in Mysore, whence it slopes to the southward, forming the table-land on which stands the cantonment of Bangalore. The bed of the Kistnah on the northern frontier of the Ceded Districts is 1,000 feet above the level of the sea: the plain rises as we proceed southerly to the centre of the district to 1,500 feet; on the north frontier of Mysore to 2,223 feet; at Nundidroog to about 3,500 feet; whence it sinks southerly to Bangalore, which is about 3,000 feet above the surface of the ocean. The granitic cluster of Nundidroog constitutes the axis of elevation of this part of the country. Towards the centre of the district, the surface of the plain presents a monotonous and almost treeless extent, bounded by the horizon, and unbroken save by a few rocky elevations that stand forth abruptly from the sheet of black soil, like rocks from the ocean. The country from Bellary to Tarputry, and from Pennaconda, Gooty and Adoni to the Kistnah, is much of a similar nature. Sir T. Munro might well observe that these districts are more destitute of trees than any part of Scotland he ever saw, and that the traveller scarcely meets with one

in twenty miles, and no where with a clump of fifty.* The country around Cuddapah, Gurrumcondah, Cummum and Budwail consists of flat lands at the bases of hills, well watered by streams and springs from the neighbouring heights, and studded with topes and tanks. In the Chitwail taluk the soil is said to be fertile and water abundant, yet its chief produce is *raggi*. The country to the west of Bellary is wild and hilly to the verge of the Kumply hills, whence it descends in a gently sloping plain to the bed of the Tumbuddra, its western boundary ;—here it meets with the limits of the Nizam's dominions, the Southern Mahratta Country and Mysore.

Hills.—The hill ranges most worthy of note are those of the Nulla Mulla &Lanca Mullah to the east, of Sondur and Kumply to the west,and of Gurrumcondah and Punganoor to the south. The former take a S. by easterly course, by Cummum to Cuddapah, whence they turn in a south-easterly direction towards the famous hill-shrine of Tripetty. Their formation is clay slate, sandstone, quartz rock, siliceous and arenaceous schist, with a few hills of blue and grey limestone: the base of these rocks is granite. The Sondur and Kumply ranges have a somewhat parallel direction. Granite, laminar granite, granitoidal gneiss, gneiss in distinct strata, hornblende rock, mica, hornblende, chloritic, ferruginous and siliceous schists, prevail. A blue limestone imbedding iron pyrites occupies a large portion of the Cuddapah plain, where it occurs in beds dipping generally at an angle of 5° to the east. Granite occurs in clustered and detached, dome-shaped masses, often crowned with tors and logging stones. The principal clusters are those of Bijanugger in the N. W. frontier—to the S. at Palsamudrum, to the N. at Adoni, and to the S. those of Pennaconda, &c. The greatest elevation attained is by the slate and sandstone formation of the Nullah Mulla, some of whose peaks rise to about 3,500 feet above the level of the sea. One of the peaks of the schistous ranges, to the west of Bellary, has an elevation (by trigonometrical measurement) of 3,148 feet.

Valleys.—There are no valleys that I can satisfy myself have been entirely caused by the erosive action of water, but there are many rifts in the sandstone and slate hills, that have been deepened and widened from this cause. In the same hills we see ravines and *cul-de-sac* hollows, which have evidently been formed by the water rushing down to the plains during the rains. Deep vertical fissures cross the sandstone

* Since his time the late collector Mr. Robertson has done much to improve the appearance of the country by the plantation of numerous topes.

ranges often clearing the hills to their bases; which appear, from the absence of disturbance in the stratification, to have originated in the contraction of the rock itself, during its solidification; and subsequently enlarged by the action of springs, which are often seen to burst forth at these discontinuations of the strata, and the rivers that find a vent through, and wash the base of the cliffs. The pass of Ganjecotta, and the fissures of the hills south of Cuddapah afford good examples of these contractions. The principal valleys, however, follow the direction of elevation, that is southerly and easterly.—The spaces between the granite hills, (for they cannot with propriety be termed valleys, and their flatness is only interrupted by small tali round the hills of alluvial matter washed from the rocks by the rains), are often strewed or blocked up by large masses, precipitated by spontaneous splitting and exfoliation from their sides and summits.

Rivers.—The Kistnah, Tumbuddra, Pennaur and Hogri are the most considerable streams. The Kistnah rises in the Mahabaleshwar hills, enters the Ceded Districts, or rather Kurnool, at Calloor, where it meets with the Tumbuddra a few miles to the N. E. of the city of Kurnool, and taking an E. by N. course quits the territory a little to the east of the Hoosanugger ghat, falling into the Bay of Bengal, after a course of about 700 miles, at Sipelar point.

The Tumbuddra is formed by the confluence of two rivers—the Tunga and the Bhadra: the first rises among the western ghats south of Bednore; the latter among the Baba Booden mountains. The *sungum*, or point of confluence, is at the sacred village of Coodly near Hooly Honoor. The united rivers enter the S. western frontier of the Ceded Districts, nine miles north from Hurryhur, taking at first a N. by W. course, but shortly turning to the E., flow in a north easterly direction, dividing the ruins of the ancient cities of Bijanugger and Annagundi, to Hullaykola, where they are joined by the Hogri about 40 miles N. by E. from Bellary. At the foot of the walls of Kurnool the Tumbuddra is met by the Hendery, and shortly afterwards mixes its waters with those of the Kistnah at Calloor.

The Hogri river has its rise near the Baba Booden mountains in Mysore; pursuing a northerly course of about 200 miles to the Tumbuddra, it enters the S. W. limit of the district about 12 miles S. of the hill fort of Raidroog, passing about 9 miles eastward of Bellary.

The Pennaur springs from the granite hills near Nundidroog in Mysore. It enters the southern boundary of the district at Challoor; pursues a N. by W. course to Ooderpidroog, whence, passing easterly by Tarputry through the chasm in the Gundicota chain, and washing the

south-eastern base of the Cuddapah hills, it escapes through the valley of Sidhout and the Nellore district to the Bay of Bengal. Its tributary streams are the Chitravati, the Coond, the Paupugni, the Maundavia, the Paugher, the Baugonuddi, the Saggelair, the Goongaina, and a few others of minor note.

None of the rivers of the Ceded Districts are navigated for the purposes of trade beyond the transit of merchandize over the ferries; and, with the exception of the Kistnah and the Tumbuddra, serve merely for the purposes of irrigation and as channels of drainage during the rains. During the greater part of the year the beds present a sandy waste, and the banks a succession of barren sand dunes. The Kistnah and Tumbuddra have in many places rocky banks and beds, which, added to the rapidity of their currents, are great obstacles to navigation. They are unfordable commonly from June to October or November; but this of course must depend on the monsoon. A large quantity of carbonate of lime is deposited in all by their tributaries, on whose banks it is often seen in mounds and large beds, often forming a conglomerate with the pebbles and sand brought down by the streams.

Ferries.—The principal ferries from the Ceded Districts into the Nizam's countries over the former are those of Mooreconda and Purwuttum: and over the latter those of Kurnool, Madaveram, Naguldinny, Hulhully, Bijanugger, Humpsagur and Mangala. The two last lead to the Southern Mahratta Country.

These ferries are crossed by means of the well known basket boats; one or two of which, belonging to the Government, are generally stationed at each ferry, and a similar number belonging to the Nizam on the opposite bank; but in cases of emergency, for instance for the passage of troops, from twenty to thirty can be collected at any given spot at a few days warning. They are generally from six to eleven feet in diameter, and the largest will readily admit of the transit of a mounted 6 pounder. One of 15 feet in diameter and between 3 and 4 feet deep, with flat bottom, and straight or slightly curved sides, will carry a brass 18 pounder or 8 inch howitzer mounted, or a tumbril loaded with ammunition. The boats can be easily carried with troops on the shoulders of coolies. The invention of these useful means of transport is of considerable antiquity among eastern nations: Herodotus observed boats of a similar construction on the Euphrates near Babylon. The banks of the Tumbuddra, at the principal military ferry into the Southern Mahratta Country at Humpsagur, are 1,159 feet asunder; at Hulhully into the Nizam's country 1,642 feet, and at Madaveram and Kurnool; on the military roads from Bellary and Bangalore to Hydrabad, about 1,900 feet.

Lakes, Marshes and Springs.—There are no lakes nor marshes of any note: the springs and wells are often impregnated with muriate of soda and carbonate of lime in varying proportions. Saline and fresh springs sometimes occur in almost immediate proximity; a phenomenon to be ascribed probably to the almost vertical strata through which they rise. It is a curious fact that many gardens, particularly at Bellary, formerly extremely productive, now yield, comparatively speaking, little or nothing: this I have found to arise from the practice of irrigating them with water drawn from brackish springs; the water evaporating leaves its saline contents disseminated in the soil, which, by constant progressive accumulation, first diminishes, and eventually destroys the power of vegetation. Copious springs of fine water occur in the Paliconda hills, a little to the south of Cuddapah; falling from precipices occasioned by deep rifts in the sandstone rocks they add much, during the rainy season, to the picturesque character of the wild scenery among which they are situated. Some of the springs near the base of the hills rise from a considerable depth, as indicated by the slightly thermal character I found them to possess. The thermometer, immersed in the water close to the orifice from which it bubbles up from the rock, indicated a temperature of 88° Fahrenheit; while that of the water in the rivulet close by amounted only to 72°. The temperature of the atmosphere was 65°. There is a saline spring in the blue limestone at Jummulmudgoo, into which the newly dyed chintzes are dipped for the purpose of fixing the colour. The water contains a considerable proportion of muriate of soda, which is also found in thin efflorescing layers on the edges and between the planes of the laminæ of the rock.

Soil.—The soil is principally the regur, or black cotton ground, mingled more or less according to situation with calcareous matter, arising from the kankrous deposit so common in many parts of India, the debris of the subjacent rocks, and decayed animal and vegetable matter; the latter in small proportion. In the Bellary division, for instance, where the rock formation is chiefly granite, gneiss, and its associated schists, the regur is mingled with decomposed felspar, gritty particles of quartz, and often covered with angular pebbles of white quartz, ferruginous quartz, jasper, &c. The bases of the hills are generally surrounded with the soil arising from their own disintegration, which is carried to a considerable distance by the transporting power of streams and rain. In the Cuddapah district the decomposition of the limestone, calcareous veins, clay slate and sandstone, imparts a lighter colour and a looser texture to the regur; which, added to the nature of the stratification

and greater abundance of springs in the limestone and sandstone, renders it favourable for the cultivation of indigo, there carried on to a considerable extent. The trap dykes decompose into a deep red or coffee-coloured soil, which appears to be more fertile than that resulting from the decomposition of granite and gneiss. The term *mussub* is often indiscriminately applied to all reddish soils, but native agriculturists confine the word to the mixed black and red soils. Of all soils, the most sterile are those where saline efflorescences are observed; and those resulting from the decomposition of beds of unmixed quartz.

Agriculture.—Cultivation may be classed under two heads, viz. the dry and wet, the *khushki* and *tari* of the Moguls. The former depends on the heavens for a supply of water; the latter, the extent of which is estimated at about one-seventh of the total superfices of cultivation, on wells, tanks, anicuts, acqueducts and streams. Dry cultivation is divided into two seasons, viz. the crops usually sown in June, termed *mungari*, including the staple articles of produce, viz. red and yellow juari (*Andropogon Sorghum*), bajra (*Holcus Spicatus*), culti (*Glycine tomentosa*), and dal; and the crops sown after the rains in Sept. or October, called *hingari*, embracing cotton, white juari, wheat, and chenna, tobacco, rice, sugar-cane, &c. are articles of wet cultivation or artificial irrigation; the first is sown in September. Rice is generally sown in June and July, and also in October and November. Indigo is a triennial plant, producing two and sometimes three crops in the year, and requires much care.

The expense of bringing waste regur lands into cultivation falls heavy on the rayet. The surface is first cleared of the *kikar*, *turwer*, and other bushes and thorns. The next process to disencumber the soil from roots, weeds and superfluous stones, by ploughing it three times successively; the second time at right angles with the first and the third in an oblique direction. This is a most laborious process, lasting often nearly two months, and is done by means of the large plough drawn by from ten to sixteen bullocks. It is however absolutely necessary, in order to break up the roots of that bane of Hindu cultivators the *nuth* grass, particularly that partially choked by the *gurraka nuth*, for which no remission is made by government, except when it completely covers the land and requires the great plough to eradicate it. A remission of rent is allowed for regur lands which have lain waste six years or more, and for ground encumbered with patches of the *kundai nuth*. After the first clearing, the great plough is laid by for the next 12 or 20 years. All that is necessary, preparatory to sowing the succeeding crops, is to run the soil over with the light common plough. After the ground

has been thoroughly broken up, it is thrice harrowed for about a month; after which the cotton seed is sown with *kusum* or *kungoni* by means of a drill plough, the drills being usually from twelve to eighteen inches asunder. If the season be favourable, the cotton makes its appearance in about 5 days. The weeding plough, furnished with the double or treble hoe, now comes into use, and is employed from time to time until the pod is ready for gathering, viz. from January to March. The rayets, aware of the tendency of cotton to exhaust the fertilizing principle of the soil, sow it in rotation biennially with white *juari*: and sometimes even in triennial rotation, viz. one crop of cotton after two of *juari*. Many agriculturists sow their regur lands in the following order, viz. cotton, juari, chenna, and so on. The cultivation of cotton has been on the increase for the last few years, owing to the increasing demand for the raw articles in European marts. It has been tried in the *mussub* soils of Bellary and Mysore, but without profitable results.

The cultivation of the *mussub*, or red soil, is too well known to require explanation here. It is simply cleared of rubbish, shrubs and roots, and run over two or three times with the common plough. The chief products are *bajra* (*Holcus Spicatus*) yellow *juari* and *culti*. The principal rice or wet land districts are those of Pennaconda, Mudducksera, Codyconda, Durmaveram, Anantipur, the Cummum valley, the banks of the Tumbuddra, and taluks lying near the beds of the Pennaur and Hogri rivers. Indigo is grown principally in the Cuddapah collectorate, in a regur, mixed with the detritus of the limestone kunkar and sandstone. It has lately been introduced into the Bellary collectorate at Tarputry. Sugar-cane flourishes best in the mixed black sedimentary and red soils, containing both protoxide, peroxide of iron, and lime, near the banks of rivers, and in the beds of tanks. It is cultivated with the greatest success in the western taluks of the Bellary collectorate, on the S. bank of the Tumbuddra, and under tanks. It is planted by cuttings, generally from February to the end of April, and ripens in about nine months. The crops are made to alternate once in three or four years with rice. I need hardly observe that the seasons of sowing and reaping all the crops depend upon the timely supply of water, the failure of which caused a severe famine in 1803 and great scarcity in 1833. In 1838, the early crops failed from a similar reason: in some places not a blade appeared above the ground, the plain presenting a dreary black waste; in other situations the crops did not come into ear, and the straw was cut for forage.

Implements of Agriculture.—The implements for agriculture in common use, are a variety of small ploughs, drawn each by two bullocks, and

the great plough that requires from eight to sixteen. The latter is used to break up the roots of the nuth grass, in preparing waste or choked up regur lands for the smaller plough. Drill ploughs with three or four shares, are employed for sowing; and for weeding, large and small harrows, furnished with small hoes, cutting almost horizontally. They are drawn commonly by two bullocks. The bill-hook and pickaxe are sometimes employed in clearing the land. The mamotie, or Indian hand spade, is in universal use. The total number of ploughs in the Ceded Districts amounts to about 155,522.

Manure.—It is a remarkable quality of the best sort of regur or black soil, that, provided proper attention be paid to the due rotation of crops, it does not require manure nor irrigation, beyond the usual periodical supply afforded by the rains and dews. In the immediate vicinity of villages we sometimes see its refuse thrown on the mixed black soil, but I am assured by many intelligent rayets that the first sort of regur would be deteriorated by manure. We must therefore consider its component parts blended together in proportions too accurately balanced to need addition. The most common manures for the inferior sort of regur and mussub lands, are sheep dung, mixed with village ashes, rubbish, &c. ploughed in for dry grain lands, once every three or four years. Red soils are also manured annually by folding large flocks of sheep upon them; 1,000 sheep being calculated to be sufficient for six acres in ten nights. Cow-dung for sugar-canes is considered inferior to sheep dung, which is used annually, and, when the soil requires loosening, mixed with a little red earth. Cow dung is also in great request in the Ceded Districts, where fire-wood is scarce as a fuel; for which purpose it is made up into thin cakes, termed *bratties,* dried in the sun, and piled into stacks: the ashes form a good manure. In the indigo districts I have seen the stalks and leaves of the plant, after the extraction of the dye, used as a manure, sometimes twice a year, particularly to wet rice grounds. In other districts the leaves of wild plants, such as the *Cassia auriculata,* mixed with sheep dung, are employed. In gardens, sheep's blood, garbage, stale fish and other stimulating matter, are applied annually to the roots of the grape vines, which are bared for the purpose. To betel plantations, sheep's dung, wood ashes and red earth mixed, are applied once in from three to seven years. To the roots of the cocoa and areca palms, cow and sheep dung, mixed with the sedimentary deposit from the beds of tanks and pools, should be applied once a year. Some natives apply a quantity of common salt to the very top of the cocoa-nut tree, which dissolving is supposed to penetrate downwards to the root

and increase the produce of fruit: others apply it to the soil around the root of the young tree.

Irrigation.—Irrigation is conducted by means of tanks, wells, rivers, rivulets, water-courses leading from the larger streams. Water is generally drawn up from the wells at a depth of from 6 to 50 feet by the common mote, or water-wheel, turned by from two to four bullocks moving down an inclined plane, the length and degree of inclination of which is dexterously adapted by the natives to the depth of the well. The water is thus drawn up in a large leathern bag, or bucket, and poured into a channel artificially raised above the level of the land to be irrigated, and diffused by small acqueducts over its whole extent. The skill and ingenuity displayed by the Hindus in this practical branch of hydrostatics, is no where better exemplified than in the ruins of Bijanugger; where, by means of a number of magnificent dams, or anicuts, thrown across the course of a large and rapid river, its waters were plentifully distributed by stone acqueducts in many places raised on pillars, to every corner of a most extensive and populous city, and to this day irrigate large and fertile tracks on the river's banks. By means of the mote water is also raised to the surface from the deep beds of rivers, and poured into the adjacent fields. The *yettum,* or balance beam, turning on a wooden pivot, and moved on the principle of a lever by a single cooly, is much employed in garden and other cultivation of small extent. The principal tanks are those of Cummum, Hundi, Anantipur, Bukapatnam, Dunnaikenkerra, Durmaveram, Daroji, Herri Toombul, and Yerratimraja Cherru. The keeping in repair of the embankments of the tanks and of the anicuts, is provided for by Government, and confided to the charge of the civil engineers. The number of anicuts* over large rivers in the Bellary collectorate, amounts to 46: over small streams to 285. The number of tanks, that are kept in repair and conduce to irrigation, in the same collectorate is 1401, and of wells 22,440.

Meteorology.—The wind blows generally from S. W. to W. and N. W. from March to October, and during the rest of the year, from N. E. to S. E. In January and February, it often shifts from the N. E. to the S. W., W., and N. W. and is usually strongest in March and April. Showers fall from April to November, at first attended with severe thunder storms. March, April, May and June are the hottest months; November, December and January the coldest months during the year. The greatest

* The anicuts are constructed of large masses of granite, in many places clamped together with iron. They are built in great part on masses of rock which reduces the height of the artificial stonework—much of which is only five or six feet high. The general height of the anicuts from the river-bed, is from 9 to 12 feet.

quantity of rain generally falls in September and October: though, in 1838, more fell in July than in October. On account of its centrical inland position, Bellary is removed from the full force of either monsoon; this renders the periodical changes which occur with comparative regularity in tropical regions, subject to vicissitude and uncertainty; therefore, what is here said regarding its climate, &c. must be taken merely as approximative. The thermometer (Fahrt.) ranges during the year from 48° to 98° in the shade. Less rain is supposed to fall at Bellary than at any other place in Southern India. During the year 1838, only 11½ inches of water fell; but it must be recollected, that this was an uncommonly dry season. Hail is rather uncommon: I have seen it fall during the thunder storms in May, in globular concretions varying in size from a swan shot to a musket ball. The quantity of moisture in the atmosphere indicated by the hygrometer, during the months of December and January, is extremely minute, although the air is remarkable for its transparency. Humidity increases the transparency, as may be observed a few hours, or even a day before, or after a fall of rain. The degree of electricity it contains, is evinced by the simple experiment of passing a brush rapidly through the hair once or twice, after it has been dried: this frequently produces a harsh crackling noise, the explosions of a shower of electric sparks plainly visible in a darkened room. Mirages and halos are of frequent occurrence. I have witnessed a curious species of the former phenomenon on dewy nights and mornings, caused by the rays of the moon, when low in the zenith, falling at an acute angle on the horizontal plane of the bank of vapour. This lunar mirage produces the illusive spectacle of a vast sheet of water, tranquil and glittering as the surface of a polished mirror. Objects seen at a distance on the undulations of the extensive plains by the rays of the morning sun, are often singularly magnified to more than double their natural size: this deception vanishes as the sun advances in the heavens. Meteors are most frequent from November to March. On the 2d January 1831, a meteorolite fell in the Cuddapah district, a fragment of which is deposited in the Museum of the Asiatic Society of Bengal. Few experiments have been made, or at least their results not made public, on those interesting objects of meteorological enquiry, viz. radiation, light, electricity and moisture; but it is to be hoped that these branches of research in a climate so remarkably influenced as that of the Ceded Districts, will be more carefully attended to. The mean temperature of Bellary, result of a year's observations, is 80° 5″ Fahrenheit, the temperature of a spring is a little below this.

Fences.—The waste lands are never, and the cultivated seldom, divided by fences, except during the time the grain is on the ground, and then they are merely slight enclosures formed by a few thorns. The betel and other gardens and orchards are permanently fenced, generally with *diwanah gunna*, milk-hedge, aloe, prickly-pear, or *hinna*, the latter is rare and usually seen in gardens. Loose stone walls, resembling those in Wales, or the hilly parts of England, are met with in rocky situations, such as Chillumcoor, Chitwauripully, &c.

Domestic animals.—Most of the animals useful to man and common to Peninsular India, are found in the Ceded Districts. The horse is rarely bred: those used by the natives being generally brought from the banks of the Bhima in the Southern Mahratta Country. Tattoos, or ponies, of a hardy description are bred in abundance. The ass is smaller than that of Europe, though large for India. The bull and cow are of the common Indian species. They are of a hardy description, capable of much fatigue, though not so large as those of Guzerat or Nellore. The buffalo is of the long-horned variety; and, from the animal's partiality for water, much better adapted to the purposes of wet cultivation than the bullock. The sheep is remarkable for the excellence of its wool; from which *cumlies* of the best description are manufactured (principally in the Harponhully taluk), both for local consumption and exportation. The number of black cattle in the Ceded Districts, is estimated at 1,353,930, of sheep 961,520.

Wild animals.—The principal *feræ naturæ* that come under notice, are monkeys, principally of the genus *Semnopithecus*, the common and great bat, the flying fox, and other members of the cheiropterous family. The great black, or labiated bear, the jackal, mongoose, royal tiger, the cheta, or hunting leopard, the leopard, the tiger-cat, the hyæna, the wolf, fox, hare, wild boar, porcupine, and the common, spotted, and goat-antelope. I have seen elk in the forests of the Nulla Mulla, they occur also among the Sondur hills, the *sciuri* or squirrel tribe, are numerous. Among birds are the Indian eagle, vulture, varieties of the hawk and falcon tribe, paroquets, doves, king-fishers, wood-peckers, the common sparrow, swallow and the crow, pea and jungle fowl, partridge, rock pigeon (the *pterocles exustus* of Temminck), quail, bustard, floriken, plover, snipe, stork, heron. Among palmipedes, we have a variety of gulls, terns, the common wild duck and goose, the black backed goose *(anser melanotos)*, teal and pelicans. Among chelonians, are the fresh water and geometrically shelled tortoise, and of saurians, we have the alligator, iguana, chameleon, and a great variety of lizards. Among ophidians ranks first in deadliness the cobra di capello and venemous whip-snake.

The rock snake is uncommon, but there are numbers of green snakes that glide among the foliage of the trees, from which they are with difficulty discernible. There is a countless variety of insects, among the most useful of which rank the silk-worm, the lac insect, and the honey-bee.

Trees and Plants most useful to man.—The most useful timber trees grow on the Nulla Mulla and Lanca Mulla hills, on the east of the districts, and in the Sondur and Kumply ranges, on the west. These hilly tracts produce teak, blackwood, moochie and chandan woods; abundance of excellent bambus and other woods used for building, agricultural implements and for fuel. In the sandy alluvial flats, and moist low grounds, especially towards the eastern frontier, the feathery cocoa-nut, the graceful palmyra *(Borassus flabelliformis)*, used for rafters, the odoriferous dwarf date (*Elate sylvestris*) abound. The plains yield trees and shrubs, many of which are employed in medicine, agriculture, and the arts—the *indigofera cœrulea*, yielding a blue dye, the *kusum* or *carthamus tinctorius*, pink and scarlet, the *muddi* (*Terminalia alata*), and the *Morinda citrifolia*, yielding red dyes, the common milk-hedge used as a black dye for leather, turmeric, the *Parkinsonia*, the *nim* or *margosa* useful for its timber, and the bitter medicinal oil expressed from its seeds, the sacred banyan, the *jaman*, the juice of which is employed to precipitate the colouring matter of the indigo, the graceful tamarind whose acidulous fruit is used as an article of food in medicine, dyeing, and other arts affords a strong durable timber, though the natives I am assured are averse to its use in house-building. The bark of the useful and hardy *Acacia Arabica*, or babul tree, often the only prominent object in the boundless plain, is used in tanning, and in medicine, its wood for the harder implements of agriculture, the thicker branches for tent pegs ; and the gum, which closely resembles that of the Arabian tree, in medicine and the arts. The bark of the *turwer* (*Cassia auriculata*), the *amuldas* (*Cassia fistula*), and the juice of the *yercum* (*Asclepias gigantea*), is used in staining and preparing leather: the latter and the milk-hedge afford the charcoal used by natives in the preparation of gunpowder. The flowers of the *Nyctanthes* are used as a yellow dye, and the leaves of the *shumbali* (*Vitex negundo*), that loves the sandy beds of rivulets, and the fruit of the trailing *Elaterium* in medicine. The wild oleander, whose deliciously scented flowers are held sacred by the natives, grows in luxuriance on the banks of the Tumbuddra. The verdant guruwi (*Ixora parviflora*), whose branches are universally used as torches, is found growing on the low jungly hills. The shrub *jatropha glandulifera* is almost confined to the cotton ground plains. That singular siliceous substance tabashir, is produced in the joints of the bambus that cluster the eastern forests, and

used by the natives in medicine as a tonic. Teak and other valuable timber is floated down the Tumbuddra from the forests of Mysore and Canara, during the S. W. monsoon, and landed near the anicut of Wullavapur on the western frontier.

Mineral products.—The chief mineral products are iron of good quality, copper, lead, antimony and manganese, diamonds, alum, culinary salt, natron or native soda, saltpetre, gun-flints, novaculites, and an inferior description of marble at Kurnool. It is probable that coal may exist in the limestone and sandstone formation around Cuddapah, and the bed of the Pennaur. The formation in this vicinity resembles that of the saliferous part of the peninsula of Araya, described by Humboldt as mostly sandstone and conglomerate, resting upon a compact bluish grey limestone. Salt is produced in the Cuddapah formation, though not confined to it. I have seen this mineral in the black soil, lying immediately above granite and gneiss, and in layers between laminæ of ferruginous schist, associated with chloritic, and hornblende slate, also between those of blue limestone, arenaceous slate and sandstone. Lead and antimony are found near Jungumrazpully in the Nulla Mullas. Copper and manganese and iron ore, also exist in these hills; the latter in considerable quantity. Copper ore, the green carbonate, is found in the ferruginous slate clay at the base of the crest of the southern epaulement of the copper mountain near Bellary; excavations are still to be seen, said to be the remains of mines excavated by order of Hyder Ali, but which were given up in consequence of the expence exceeding the produce. The most celebrated diamond mines are those of Condapetta, Ovalumpully, Punchagupadu and Lamdoor near Cuddapah, at Banaganpully; and at Muni Mudgoo and Wudjar Caroor near Gooty. I have found them invariably situated in the sandstone breccia and conglomerate. Manganese is found in the copper mountain and Sondur ranges.

Arts and Manufactures.—There are manufactories for cotton piece goods, principally salis, dupattas, turbans, palampores and carpets at Cummum, Cuddapah, Kumply, Bellary, Tarputri Adoni: for woollen cumblies (native blankets) at Harponhully, for brassware at Hirrihal and Hospett, for glass bangles at Pennaconda. The descendants of the diamond polishers of Golconda, are still to be found at Muni Mudgoo, in the Punchapoliam taluk near Gooty. There are gold and silver smiths at Bellary, Cuddapah and Banaganpully; dyers at Jummulmudgoo, and various other villages; indigo manufactories in the Budwail and other taluks of the Cuddapah collectorate. Dolls and other painted wooden and composition toys for children are made at Harponhully and Gooty. Images

are sculptured from a soft purplish stone at Tarputri. Cups and vases from variously coloured limestone at Ryelcherroo: here there was a manufactory for gun-flints in the time of Tippoo. Pyrotechny and the art of making gunpowder, are well understood by natives in most large villages, and also that of metallurgy, as far as the smelting of the ores of iron and copper is implicated. Potters, smiths and carpenters are to be found every where, being necessary members of each little village republic. The basket-makers and stone-cutters are in generally roving tribes, settling temporarily where their services are required. Silk-weaving is but little practised.

Trade.—The principal exports are cotton, indigo, coarse sugar, iron, woollen cumlies, silk and cotton cloths, cotton thread, dry grain and tobacco, chiefly to the eastern coast, Mysore and Southern Mahratta Country. The chief articles of import are betel, and cocoa-nut from Mysore, raw silk, sugar, iron and steel from Mysore, cotton and cotton thread from the Nizam's and Nuwab of Kurnool's territories, and the Southern Mahratta Country. The exports from the Bellary collectorate for 1837-8 amounted to884,511Company's rupees; the imports to 2,682,463. —Exports from the Cuddapah collectorate to 55,117 Company's rupees. Imports 476,263 Company's rupees.

Land Revenue.—According to Hamilton, it is traditionally asserted that the Hindu sovereigns assumed half the produce in kind, and converted it into money at a rate unfavourable to the farmers and cultivators. The Mussulman princes, after the fall of Bijanugger, also took half the produce in kind, but levied additional duties on the farmer's share, after converting their own into money at the average of the ten preceding years. When the British took possession in 1800, the rayetwar system was introduced by the first collector, Major Munro, with progressive advantage to the state and to the cultivator. The village system, which assimilates that of the zemindari in the *modus operandi*, was subsequently introduced, but, I believe, proved a total failure. The modified rayetwar system, which now obtains, was then reverted to, and is briefly as follows.

The cultivated lands of each village are carefully measured, and assessed agreeably to the average value of the crops. The tahsildar, or native collector of each taluk, visits every village under his charge, early in the season, in order to inspect the lands, to grant leases of waste lands, to receive back any which the rayet may not wish to continue or have the means of cultivating, and to settle the probable amount of revenue for the next season. When the crops are nearly ripe, the European collector assembles the rayets of each taluk, examines the esti-

mates and reports of the tahsildars, and compares them with the separate detailed accounts kept by the curnums, or accountants of each village, and the *vivâ voce* statements of the rayets themselves touching the lands they hold. From their accounts a minute statement of the quantity and value of ground occupied by each cultivator, the number of his family, cattle, &c. the sums paid by him to government for several years past, is prepared by the people of the kutcherry, on which the collector's final settlement is eventually based. The collector again checks these estimates by enquiry from the rayets themselves, to each of whom he finally gives in open kutcherry a *puttah*, containing a short abstract of the rayets holding and demand upon him for the year. These leases are renewed annually, but the rayet cannot be ejected from the land so long as he continues to pay the government dues.

The revenue is collected from the rayets by the village potails, curnums and the regular village servants under their authority, and delivered into the treasury of the tahsildars of their taluks, by whom it is remitted to the general treasury of the district. Receipts are regularly passed between the different parties, not only expressing the total of the amount delivered over, but specifying minutely the different coins in which the sums have been severally paid. The average amount paid by rayets upon lands held direct from government, amounts in the Bellary districts, to about 23 rupees 14 annas, and in the Cuddapah collectorate to about 15 rupees 9 annas per annum. The average of total revenue annually paid by each inhabitant in the former district, is about 2 rupees 8 annas, in the latter 2 rupees.

The other sources of revenue are the land customs, the *moturpha*, which includes taxes on shops, trades, &c., the *abkari*, duties on intoxicating liquors and drugs, the stamps, and a few small farms.

Regarding the amount of revenue derived by the Bijanugger princes from the Ceded Districts,nothing satisfactory is known. It was valued in the deed of cession in 1800 at 1,651,545 star pagodas, but Sir T. Munro was of opinion that the revenue had been decidedly and purposely overrated in Tippoo's schedule of 1792, in consequence of his deeming it certain that most part of the territory would be shared by the British government and the Nizam. The first settlements were therefore fixed much lower than the former estimates—that for 1801 amounted to 1,102,000 pagodas, exclusive of village servants ; the next year it was calculated at between twelve and thirteen lacs : in 1817 it amounted to 1,740,304 star pagodas—in 1836-7 to 5,362,738 Company's rupees,and in 1837-8 to 5,517,700 Company's rupees. The disbursements amounted

to 879,894 Company's rupees, leaving a profit to the state of 4,637,806 Company's rupees.

Population.—The population of the Ceded Districts amounted in 1805 to 1,917,376: it now (1838) amounts to 2,211,168, or a little more than 93 to the square mile, of whom about 121,777 are Mussulmans and 2,089,391 Hindus. The population of Scotland, which has an area a little more extensive than that of the Ceded Districts, amounted by the latest statistical accounts to 2,365,930, or a little less than 80 to the square mile. The population of the Bellary collectorate slightly exceeds that of Cuddapah: the former being estimated at 1,129,907 and the latter at 1,081,261. The number of males is greater than that of females by an excess of 105,868. The fact of there being fewer females than males in India, where a plurality of women is permitted, I have also noticed in ultra gangetic countries particularly on the Malayan peninsula. Whether the proportion of males actually born, exceeds that of the females born, or not, is a point of interesting, though difficult enquiry; at least during the present state of our social relations with natives. The expense of rearing female children is doubtless in some instances productive of infanticide, and might possibly induce many parents to neglect them from their earliest infancy, when most in need of support and protection, and thus passively permit the feeble spark of dawning life to wane, and be extinguished long ere fully lit. From many enquiries, I am led to believe, that the fecundity of the females of India does not on the whole average less than that of European females, although it has been so stated by political economists.

The artizans, tradesmen, agriculturists, and shepherds, are generally Hindus. The Mussulmans dislike agriculture, preferring the chance of employment as peons, &c. under the civil authorities, rearing silk worms, weaving and cleansing cotton, &c. A few enter trade as cloth merchants, perfumers, druggists or farriers. They, as well as the Beders (the military class of Hindus in the Ceded Districts), can with difficulty be persuaded to enlist as sepoys, preferring idleness and almost starvation. Mahomedans are to be found both of the Sunni and Shiah sects; the former is the most numerous. The prevailing castes of Hindus are the Kunbi, Lingayet, Beder and Dhungar. Brahmins are numerous of the Vaishnava and Smarta sects. The Sri Vashnavam is comparatively rare. A few of that persecuted tribe, the Jains, still exist, maintaining themselves commonly by trading in brassware and cloths. A wild race, termed Chensuar, roam the forests of the Nulla Mulla hills, subsisting on wild fruits, honey, insects, roots and the spoils of the chace, also by barter with the inhabitants of the plains.

State of Education.—The Hindus appear to me to be better educated than the Mussulmans; they have numerous schools, which remind one of those of the Lancastrian system, and they are often excellent accountants. A few of the brahmins know as much of astronomy as will enable them to calculate an eclipse with tolerable accuracy. The education of Mussulman children, is almost confined to reading and writing, the knowledge of their creed, a few prayers, and a section or two of the Koran. The number of native schools in the Ceded Districts amounts to about 1,030.

Prevailing Language.—The prevailing language spoken from the western frontier to Gooty, is Canarese: from Gooty to the eastern limit, Telinghi. The Chensuars it is said possess a dialect peculiar to themselves.

Roads.—The direct military road from Madras to the head-quarters of the division, stands much in need of repair. Coolies and loaded bandies, to avoid it, often take the circuitous route of Nundidroog, preferring the great additional distance to the inconveniences of the direct route by Cuddapah. It is said that Government has it in contemplation to open the Nundi Cunnama pass over the Nulla Mulla range, this work will afford a direct communication between the Ceded Districts, Nellore and the ports north of Madras on the eastern coast, and is likely to prove highly beneficial to the trade of these countries. The following are the marches on the principal roads through the Ceded Districts from Bellary:—

TO MADRAS.

	M.	F.
Cuggul	10	0
Guddacul	13	3
Goontacul	10	4
Ameenapilly	8	1
Gooty	12	1
Ryelcherroo	14	7
Tarputtri	16	6
Tallapodatoor	11	1
Chettywaripilly	11	9
Chilmacoor	14	3
Appiapully	14	5
Cuddapah	12	0
Wontimetta	16	4
Nundaloor	12	4
Pollumpett	13	2
Codoor	16	3
	208	5

TO BANGALORE.

	M.	F.
Boodihal	8	2
Honoor	12	1
Bellagoopah	14	7
Gollah	9	6
Rampoor	9	7
Peroor	9	6
Terimany	10	2
Goghirry	10	1
Jalipett	6	5
Palsamudrum	11	7
	103	4

TO HYDERABAD.

	M.	F.
Karlagoondy	10	0
Taulloor	9	1
Lingadahully	12	3
Adoni	11	6
Heera Toombul	12	6
Madaveram	15	5
	71	5

TO S. MAHRATTA COUNTRY.

	M.	F.
Courtney	11	6
Gooricoopah	8	1
Paupnaikhully	11	2
Hospett	7	7
Balahoonsee	13	0
Humpsagur	15	0
	67	0

Antiquities.—The ruins of the ancient capital of Bijanugger are worthy of notice, presenting to the admirer of Hindu sculpture and architecture an interesting study, principally of the style of the 14th and 15th centuries. The Caryatid figures supporting many of the entablatures, the elegantly grouped columns of the Viddia Vittel temple, their richly ornamented shafts, capitals and architraves, the entablatures of the throne terraces, covered with spirited bas-reliefs, representing combats, fetes, hunting scenes, and mythological events, the colossal statues of the sacred bull, the lion avatar and the elephantine god Ganesa, hewn from solid granite, basaltic hornblende, greenstone, and a dark green talcose rock, beautifully polished, arrest the attention of the traveller. The arch, the alleged ignorance of the turning of which has been repeatedly adduced as an unanswerable proof of Hindu barbarism, may be seen in some portals and in the winding passages leading up to the summits of the *gopars*, or pyramidal towers of the pagodas, which assimilate the propylæa of Egyptian temples. The angularity and heaviness of many of the shafts, the lowness and gloom of the apartments, the excessive minuteness of detail, coupled with the want of general design, keeping and harmony of conception, have often struck me when gazing on the works of Hindu artists; defects from which even these ruins are not exempt. But, we are lost in admiration when we behold the stupendous masses of hewn granite, fitted and placed with the utmost nicety, one upon the other in the Cyclopean masonry of the mortarless walls and fortifications, that begird the city with a sevenfold cincture. The perspective view afforded by the colonnaded vista of the Humpa street, running along the southern bank of the river, its grass-grown pavement, the solitude and air of desolation that prevails, is almost free from the defects above mentioned, and might bring to mind the deserted streets of Pompeii. The mixed Hindu and Saracenic character of some of the later buildings, speaks intelligibly of the spread of the Mahomedan power that finally overwhelmed the Hindu empire of which this city was the capital. There are numerous inscriptions on pillars and stones interspersed among the ruined temples, copies of most of which are in possession of the Branch Asiatic Society of Madras. A few specimens of the ruder, or Cyclopean, style are to be met with in every part of the district. Ancient places of sepulture, marked by rude circles of stones, mounds and barrows, resembling those of Britain and Northern Europe, monuments to the memory of heroes slain in battle, and to such of their widows that perished on their husband's funeral pile, mutilated statues and ruined fanes, remnants of the subverted religion of the Jains, are scattered over the country. The most sacred Hindu shrines are those of Humper, Sondur, Tarputri and Purwuttum on the south bank

of the Kistnah. Numberless rude representations on stone, many apparently of great antiquity, of serpents collected together in temples, under trees, and the walls of the older villages are evidences of an ophitic worship that prevailed anciently to an unknown extent. To this day remnants of it exist, the clue afforded by which it might be of interest to trace. There are some singular mounds of a scoriaceous substance, containing carbonate of lime, in the vicinity of Bellary.

Coins.—The numerous political changes and revolutions that have convulsed this part of India, could not fail to produce a great variety of coins. Among the most ancient of those formerly current are the golden pagodas and half pagodas of the Bijanugger sovereigns, and of their vassals, the chiefs of Harponhully, Raidroog and Gundicota, known by the names of the Achit Raya, Kishen Raya, the old and new Harponhully, Vencatpati and Timma Naid Pertap pagodas. Next succeeded those of the Mahomedan kings of the Deccan, the Mogul empire, and their viceroys, called the Mahomed Shahi, Alumgiri, Farsipadi and Jummulmudgoo pagodas; some of the later of which were coined at Adoni, Cuddapah and Jummulmudgoo. The gold coins of the Mahratta conqueror Morari Row were the Gooty Mahomed Shahi, the Subaroyi and the Tarputtry pagodas. A number of gold pagodas were introduced by the Asaph Jah or Hyderabad chiefs, among which were the Karkmodi, coined at Karkmod, Masulipatam, &c. Lastly, the conquests of Hyder and Tippoo overwhelmed the country with the Mysorean currency from the mints of Seringapatam, Mysore and Cullicota. Their pagodas are generally known by the terms of Bahaduri and Sultani. Those of Hyder bearing the Arabic initial of his name, and those of Tippoo, his name and title. Ashrafis or gold mohurs were rare, those of Delhi and the Ahmadi being the only specimens current. The gold fanams rank next to the pagoda: those of the Bijanugger dynasty are rare. The Naidi fanam, coined by Timma Naid of Gundicota, is worth 5 annas 10 pice. That of the Poligars of Ghuttu 3 annas 6 pice. This is also the value of the Kanjit gold fanam introduced by the Cuddapah Nuwabs, Hyder and Tippoo. I have not met with any silver or copper coins of the Bijanugger sovereigns: those formerly in circulation consisted almost entirely of rupees and fanams, introductions from the Nizam's dominions, Mysore and Arcot. The Adwani rupee was coined by Basalet Jung at Adoni, and is now valued at 15 annas 2 pice. The Imami Nokhara, a double rupee coined by Tippoo at Seringapatam, is valued at 2 rupees 1 pice; the Pulachari of Hyder at 1 rupee. The whole of the varieties termed Chelavani from the Nizam's dominions fetch 12 annas 10 pice.

VI.—*Journey of the Russian Mission from Orenbourg to Bokhara.**— *Translated by Colonel* Monteith, k. l. s. *Chief Engineer of the Madras Army.*

To the Secretary to the Madras Literary Society,
and Auxiliary Royal Asiatic Society.

Sir,—I have the pleasure to send you a translation of the Journey of the Russian mission from Orenbourg to Bokhara, during the years 1820 and 1821. The author, Baron Meyendorff, attached to the Russian embassy, gives also some account of the different states in Tartary, which it had been my intention to translate also; but the map, without which it would be unintelligible, has unfortunately been mislaid: the remainder is therefore deferred till a future period.

I have never seen another copy of this work in India, and very few in England, though containing much useful and novel information, and giving the route from the Russian frontier to those of Captain Burnes and others to Bokhara. This, with Colonel Maravielle's route from the Caspian to Khiva, completes the different lines of road, by which a force may attempt to reach Affghanistan.

The route now described, appears almost impracticable for an army, which would, in my opinion, follow the banks of the Lake of Aral, on which the provisions and heavy baggage might be conveyed. This project I have heard discussed in high military circles in Russia: the object then was to chastise the Khivians for their depredations on Russian subjects, which was expected to be immediately carried into execution. In fact 1000 Yaik Cossacks actually established themselves on an island, at the mouth of the Oxus, and only returned in compliance with the orders of the Russian government. There are still two other land routes from the Russian frontier, but not so favourable as the one directly on the east bank of the Aral lake; viz. round the western and southern shore, and the second along the east coast of the Caspian Sea: they have long been known, and passed by many travellers, who have given their journals to the public, consequently do not require notice at present.

I have the honor to be,
Yours most obediently,
Wm. Monteith.

Madras, 29*th August*, 1839.

* *Voyage d' Orenbourg a Boukhara, fait en* 1820, *a travers les steppes qui s' etendent a l'est de la mer d' Aral et au-dela de l'ancien Jaxartes; Redige par M. le Baron* Georges *de* Meyendorff, Colonel à l'etat major de S. M. l'Empereur de toutes les Russies; *et revu par* M. le Chevalier Amedee Jaubert, &c.—Paris, 1826.

TRANSLATION.

BOOK FIRST.

Chapter I.

Preparations for the journey—Departure—Dangers on the road.

The persons attached to the embassy to Bokhara arrived at Orenbourg in the course of the month of August. About the same time, an order was given by general D'Essen, military governor of Orenbourg, for the Cossack soldiers andBaschires intended to form the escort: but the party could not be assembled before the middle of September, and the fine season was passed away. From economical motives, we had at first intended to use carts for the carriage of provisions, &c.; but we were obliged to give up this plan, from the information we received of the nature of the country,through which we had to pass, and we determined to substitute camels to carry the baggage, and merely to take 25 carts for the transport of any of the people who might fall sick or meet with accidents by the way. Each cart was drawn by four horses, driven by a Baschire. As we had to cross rivers in the steppe of Kirghiz, we were provided with two boats placed upon carts—the carts being so constructed, that, by fixing them upon the boats, they formed rafts capable of bearing 20 men.

Our march in the desert being likely to last two months,it was necessary to carry about 500-lbs. of biscuits for each soldier, and 5 quintals of oats for each horse; besides meal for the people, a double allotment of ammunition for our two pieces of artillery, 15 kabitkas,or felt tents, 200 casks for carrying water across the desert, and several barrels of brandy. 320 camels we loaded with the provisions, &c. for the escort, and 38 with the baggage and provisions of the ambassador's suite. The military governor had made arrangements with the Kirghiz chiefs, that, upon the payment of 110 paper roubles (about £4 10*s*.general exchange, 25 to the £ sterling, the 358 camels we required, were to be at the gates of Orenbourg on the 6th of September ready, each to carry a burden of 640-lbs. The long wished for day came, but not one Kirghiz appeared. The market of Orenbourg was unable to provide us with the quantity of oats indispensable for our escort, and we were therefore obliged to dispatch messengers to seek it in the surrounding country that is to say, 150 verstes from Orenbourg, and we did not obtain it till 20th September.

The expense of the escort during its absence from Russia, was calculated at about 72,000 roubles, which it was absolutely indispensable to take with us in cash, that we might obtain supplies at Bokhara. The export of Russian coin being forbidden, it was necessary to obtain ducats, but the merchants at Orenbourg did not possess a sufficient number of that coin, and we sent to Troïtski, a town about 600 verstes distance, and being then also unsuccessful, we were at last obliged to have recourse to the exchange at Moscow, a distance of 1,500 verstes from Orenbourg. Many unexpected difficulties thus retarded our departure. The fine season had passed, half the month of September was already gone, and hard frosts were beginning to appear, and the cold had set in with a constant succession of rain, hail and snow.

We were therefore on the eve of commencing a journey during the storms and fogs of October and November. I thought of the sufferings endured by the army of Timour against Khiva, related by Sherif Oudin, when " some lost their ears, noses, hands and feet; the sky looked like a cloud, and the earth was but a mass of snow."

We were about to pass through a colder country, than that which caused the destruction of this famous conqueror; and I felt compassion for our poor soldiers; who, unprovided with furs, would be exposed to the inclemency of a very severe winter. We had much consultation with the Kirghiz, to determine which route we were to pursue, and to make ourselves acquainted with the difficulties we were likely to encounter. Five of them were chosen as guides; the principal of whom was named chief; having also the command of sixty other Kirhgiz, who were engaged to load, drive, and take care of the camels.

These animals belonged to different proprietors, and are usually in herds of from twenty to sixty, called *koch*, led by a Kirghiz chief. The baggage was distributed among the different *kochs*; we made a trial of the way of loading the camels, and found packs of a long shape the best for that species of carriage. On the 9th of October, arrived the last of the camels we required, and our departure was positively fixed for the following day.

At last, on the 10th, the whole escort assembled in the great square at Orenbourg, and passed in review before the governor-general. He caused mass to be said, and a blessing pronounced upon the travellers. There was something solemn and imposing in the religious ceremonies, the loud vocal music, the benediction bestowed on the eve of so long a journey through immense deserts; and it acquired a fresh interest from the presentiment of the dangers and difficulties to which such an expedition was likely to be exposed.

In fact, the dangers to be apprehended were sufficiently numerous : it was very possible, that the Kirghiz, always greedy of plunder, and unwilling that the Russians should explore these deserts, might attack us during the night, nor was this fear without foundation, for not far from Sir-dèria in 1803, Lieutenant Gaverdvosky was attacked by the Kirghiz. He himself escaped after the most obstinate resistance, but his wife, his physician, and the fourth of his escort fell into the hands of the savages. Even supposing the Kirghiz did not dare to attack so numerous a party, they still had it in their power greatly to increase the difficulty of our journey, nay, even render it impossible for us to go on, by burning the grass and reeds on the steppe through which we had to pass. Another very usual species of attack among those tribes is by stealing nearly all the horses, when grazing at night, carrying off a number of them with incredible celerity. These sort of attacks are greatly to be dreaded, as a small band of robbers might occasion us irreparable injury, if they surprized us from the negligence of our sentinels.

General D'Essen, who foresaw all these dangers, gladly accepted an offer made by the powerful Sultan, Haroun-ghazi Aboul-ghazi, of accompanying the embassy as far as the Sir-dèria, with a party of a few hundred faithful Kirghiz. The effect this offer would have upon the minds of the Kirghiz, greatly enhanced the value of the offer in the general's eyes.

The Khivians who occupy a part of the country to the south of the sea of Aral, were however much more to be feared than even the Kirghiz, as they are no less skilful, and more united ; sometimes making predatory excursions in bodies of from 4000 to 5000 men. Though a party of horse like these would not give much cause of alarm to our soldiers, the escort would still not be sufficiently strong to defend a troop of 700 camels, including those of the Bokharian merchants who had placed themselves under our protection.

The cunning displayed by the predatory tribes in plundering the caravans, increases the difficulty of defence. Their attacks are always very sudden, and unexpected. They terrify the camels by shouts and yells, and the animals once dispersed, easily fall in their power. The best way of preventing so dangerous a disorder is, by making the camels crouch down, as they do not willingly rise again, but often there is not time to take these precautions—and then the caravan is certainly lost ; for being without camels in the steppe of the Kirghiz, is attended with the most imminent danger, and often with the loss of life.

It was very possible, that it was not during the journey alone we were exposed to danger ; we might well feel doubts of our safety in

Bokhara, a country belonging to a warlike and uncivilized nation. Before our arrival at Orenbourg, some Bokharian merchants had said in confidence to their friends—"Perhaps none of the Christian travel- "lers will return to their own country. Even supposing the Khan of "Khiva allows them to pass, our own Khan would not commit that "folly. Why should we allow the Christians to become acquainted "with our country?"

Chapter II.

Appearance of the desert—Kirghiz Encampments—Junction of the Mission with Sultan Haroun-ghazi—Hunting of the Antelope.

The distance to be traversed is divided into three parts;—the first includes a space between Orenbourg and the mountains of Moughodjar, which we passed between the streams of Cara-akenti, and Touban, about 434 verstes from Orenbourg; the second, the space between these mountains and the Sir-deria; lastly, the third, between the Sir-dèria and Bokhara.

The ground through the whole extent of the first portion is nearly the same. You see generally an undulating surface, divided by chains of hills, of which the slopes are so gentle as frequently to extend to fifteen and twenty verstes. The absence of wood, and the trifling elevations of these eminences, always offer an extensive prospect, when the eye in vain seeks an object to fix itself on. Sterility, uniformity, and silence, are the characters of a steppe. Towards the end of May, the sun had burnt up the vegetation, and the ground assumed a brownish yellow colour.

Through all this extent, trees are only found in two places; every where else, a few thorny bushes, about three feet high, are so thinly scattered, that to the eyes of an European they scarcely break the monotony of these vast deserts.

A considerable number of streams cross the route, presenting almost always the same appearance, and generally follow the same direction. From the Oural to the Sir, they are fordable, and are nearly dry in summer and autumn. The Ilek, Emba, Temir, Or and Irghiz, merit however the name of rivers, and are never dry, though sometimes very shallow. Many of these streams only leave ravines to mark their course in the dry weather; others form a chain of ponds, frequently several

toises in depth joined by a minute thread of water but sometimes unconnected. The steppe is every year covered with deep snow, which melts with great rapidity early in spring, when the heat is frequently great. At this period the rivers and streams rise, and form rapid torrents, which scoop out deep ravines in the clay soil which universally characterizes these plains.

Thirty verstes from Orenbourg, we found on the Djilandu-tepeh, the highest hill in the neighbourhood, two fossil specimens, a belemnite and ammonite. Between the Ouzoun-Bourté and the Cara-boutak, and from that to the mountains of Moughodjar, we saw also many of these fossils, and a vast quantity of shells.

The soil is generally clay; dry and strewed with flints of different colours. The hills are usually round, with gentle slopes, as if water had smoothed the inequality of the ground.

Near the hills, of Bassagha, we saw a number of petrifactions, shells, and even a shark's tooth, which appeared to us a proof that the sea had once covered this spot. At Berdianka we observed traces of an exhausted copper-mine, mentioned by Pallas, and also of another near the Kizil-ova. They were merely excavations of an inconsiderable depth, beside which there were heaps of stones intermingled with copper ore, about 7 verstes from our encampment. On the Ouzoun-Bourté we found coal, which we tried in our forge and it burnt very well. On our arrival at Cara-boutak, we were agreeably surprised by the sight of a small wood of black alders; there also appeared to be an improvement in the soil; we had hitherto not seen any thing approaching to a healthy vegetation in the steppe, and were rejoiced to perceive it shortly after, on the banks of the Ilek. The eyes of the traveller, wearied with the nakedness of the desert, are refreshed by the sight of plants, trees, bushes, poplars and willows which are here very numerous; the pasturage, also, wherever the river overflows its banks, is very fine, and therefore a favourite resort of the Kirghiz. This is the largest river we met with, before reaching the Sir—it is 10 fathoms broad and very rapid, flowing over a gravely bottom, and abounds with various sorts of fish, such as pike, perch, gudgeons, carp, &c. It was on the banks of this river, we saw the first village of Kirghiz tents. Our attention was first attracted by the flocks of sheep, to the number of from 5,000 to 6,000—and, on approaching nearer, we saw 50 tents of white or brown felt, of all dimensions, pitched in irregular groups of three, four and six.

We learned that it was the camp of the Sultan Haroun-ghazi, one of the principal Kirghiz, who was waiting to accompany us as far as the Sir; anxious by this act of kindness to demonstrate his attachment to

the Russian government, whose support was in truth necessary to him on account of his incessant quarrels with the Khan of Khiva. The day after our arrival, the Sultan came on horseback to visit Monsieur Négri. He was accompanied by a hundred Kirghiz, and wore a turband, though it is not customary in the desert, but considered as a mark of piety in a Mahomedan who is desirous of being distinguished from the general mass of the Kirghiz. All the people that had accompanied him insisted upon entering the ambassador's tent, and as many as it could hold made their way in, and immediately squatted down after their fashion.

The interior of the tent filled with these bearded faces, had a most grotesque appearance. The Sultan was the only person with a fair complexion, fine and large black eyes, and a mild though serious expression, denoting a character of strong natural sense. He remained an hour and a half. The following day I returned his visit. On the road we encountered about fifty Kirghiz, assembled to carry into execution the sentence awarded by the Sultan against one of their countrymen, who had stolen a horse. He was condemned to death according to the law of the Koran,—but the elders of the Kirghiz interceded for him that providence may prosper the journey on which they were going, and that mercy extended to the culprit may be a favourable omen to their union with the Russians. The Sultan yielded to their solicitation, and substituted a corporal punishment for the sentence of death, which had first been awarded. This was immediately carried into execution in the following manner. The robber, half naked, having about his neck some stripes of black belt, was forced by two men on horseback who carried large whips, to run to the nearest tent, where his face was blackened with soot and marched through a group of Kirghiz; they then tied him to the tail of a horse, and forced him to hold a cord between his teeth. He was thus constrained to run after the horse which was pushed into a smart trot. The rest of the Kirghiz followed flogging the culprit with whips. The greater part of those engaged shouted and laughed with all their might. In a few minutes he was set at liberty, and immediately went to thank the Khan, promising never more to be guilty of theft. During this time the horse of the robber suffered the punishment at first intended for his master; the throat was cut, and the carcass divided into pieces, and instantly portioned among the spectators, but not without much noise, disturbance and blows of the whip.

After witnessing this scene, I proceeded to the habitation of the Sultan, who made me wait some minutes, to enable him to decorate and arrange his habitation. At last we entered, and found him seated, in the

middle of a large round tent: his friends were placed in a semi-circle on one side; on the other seats had been prepared for our accommodation. The floor was covered with a carpet, wearing apparel hung on a cord, and skins of tigers were stretched against the sides; a rich diadem of gold, very high, and ornamented with turquoise and rubies, the head dress of Kirghiz women; by their side might also be seen raw meat hanging on hooks, large leather bags of mare's milk, and some wooden vessels of different kinds. It was a strange mixture of rich objects placed beside those of the most ordinary description; the love of magnificence and show joined to the tastes and customs of a half savage society.

After quitting the Ilek, near the road to Tandy-ïaman, on a hill of red stone we discovered some large ammonites, of nearly 2½ feet in diameter, besides some rich specimens of copper ore, probably brought down by the river. Not far from the junction of the Souïouk-sou, four rivers fall into the Ilek, which, as well as the country through which it flows, from this point, is called Bech-tomak, or the five rivers.

There is a very extensive view from the summit of the Bassagha, the ascent to which is so gradual that one is quite surprised at finding so great an elevation. This hill is composed of crystallized gypsum, and the whole steppe in this neighbourhood, is covered with the same substance. The Bassagha appears to be only about thirty fathoms high, the slope is very easy on the north eastern side, and steep in the south western, a peculiarity observable in almost all the hills, on this side of the Sir.

Beyond Bassagha, the soil becomes more and more barren—*kawoul* (camel grass) hitherto abundant, becomes uncommon; and nothing meets the eye, but a clayey barren soil producing but a few miserable plants of a species of wormwood; the ground is burnt and cracked in a thousand places by the excessive heat of the sun.

We forded the Koubleïli-tèmir, after having broken the ice that covered it with a hatchet. This river was about three fathoms broad, and was in some places a fathom deep. The water is good, the bottom sandy, and the banks are covered with reeds; among which the wild boar is occasionally seen. I here observed a gang of Kirghiz, who had been working in the water for about ten minutes to break the ice. They returned to the land to deposit their axes, and then without appearing to dread the painful degree of cold that existed, they plunged three times into the water, a striking proof of the physical insensibility of the wandering tribes. The Koubleïli-tèmir is merely a brook, and I should not have considered it worth mentioning, but from the circumstance of our having found a great number of belemnites and skeletons of mice at the foot of a precipitous spot, about ten fathoms high. This attracted our

attention to the bank of the river. It was composed of many layers of conglomerate of gravel and clay, very interesting to a geologist. I was walking along by the precipice, sometimes on the ice, and sometimes on the ground seeking petrifactions, or other curious objects, when I suddenly saw in the air, a large animal that had just sprung from the top of the hill, and appeared about to precipitate itself upon me. I drew back, and he fell directly at my feet, on the ice, fracturing his limbs in his fall. It was a saïga, a species of antelope, the first I ever saw. It had been hunted by the Cossacks belonging to the escort, and they had pursued it from the plain to the top of the precipice. In its anxiety to escape them, it met its fate, owing to the blind terror characteristic of the saïgas, and which often throws them into the hands of the hunters. The Kirghiz know how to take advantage of it; they station themselves by the rivers, near the places where these animals are accustomed to resort, for the purpose of drinking—and they drive upon an inclined plain several rows of sharp reeds placed in a semi-circle, one behind another; at intervals of about twelve feet on each side of these reeds, they raise mounds of earth, and thus form an arch, of which the extremities are about fifty fathoms apart. When the herds of antelope come, the concealed Kirghiz start up, and frighten them towards this arch. The animals take the mounds for men, and fly towards the reeds, and entangle themselves in great numbers. The Cossacks of the Don chace them in another manner. During the great heats of summer, the antelopes assemble in flocks of from 400 to 500, and emigrate to a cooler region, when they swim the Don; the Cossacks throw themselves into the river armed with a knife, and kill vast numbers in the water.

People worthy of credit have assured me, that in the mountains of Gouberlinsk or Oural, during the season of the emigration of the antelopes, which takes place in June, herds of 8000 and 9000 are seen. The flesh of these animals is delicious, and the skins are used for clothes. It is in general very difficult to approach them, except during the great heats. The beasts then search some shade, and when there are no bushes or trees on the great plains, twenty antelopes will frequently place themselves close behind each other, the leading one putting its head behind a great stone, or in a hole; the hunter can then approach, and if he succeeds in killing the leading one, those that are behind will generally take its place, and several may be shot in succession.

The antelope has a very peculiar nose, it is arched like those of the Kirghiz sheep, formed with two large and deep nostrils, covered with a soft and very elastic cartilage. These nostrils are so open, that flies and

insects frequently enter, and oblige the antelope to stop and sneeze; their horns are not straight, as it is said, but spiral. Nothing can be more graceful than the motions of the antelope when not frightened; they change from a high trot to light and fantastic bounds. These animals, when young, are easily tamed; in the neighbourhood of Orenbourg they are seen, following their masters like dogs.

From the Tèmir, we marched towards the heights of Moussevil, which resemble those of Bassagha. We had got a sight of the mountain of Moughodjar, distant 60 verstes, the blue appearance of whose summits, which rise majestically and are strongly delineated on the horizon, have a very picturesque effect. Notwithstanding we were anxious to see them behind us, in hopes of escaping the extreme cold and storms of this region. By the account of the Kirghiz, the southern face of these mountains, enjoys a much milder climate. However thus far we had been fortunate. The sun had shone clear, and the cold at night seldom below 5 or 8 degrees of Reaumur; once only it was at 10°.

This cold, however trifling it may appear, was much felt by people who had been exposed all day, and had nothing but felt to cover them at night; and for fuel, miserable bushes of very small size—too happy when even they were to be procured.

The Cara-akenti, 15 verstes distant from the Moughodjar, has only brackish water, dirty and with an earthy smell; it is contained in a few holes, and was the worst we had ever seen. The Kirghiz laughed at the faces we made on first tasting it. To us it was hardly drinkable with tea; among the Kirghiz, who frequently came to drink tea with us, I have seen several who swallowed 8 pints of this liquid.

Chapter III.

Appearance of the Country—Kirghiz Tomb—Proofs of the diminution of the Sea of Aral—Mouth of the Sir.

On the 29th of October, we arrived at the foot of the Moughodjar rocky mountains, composed of irregularly grouped peaks; their appearance was wild, and they were covered with stones, rocks of porphyry, serpentine, granite, &c.

The valleys offer a remarkable contrast to the mountains: in the hollows, wherever the water collects and lodges for any length of time, the

vegetation is luxuriant, and the soil black and fertile; the Kirghiz take advantage of it both to cultivate grain, and also as pasturage for their cattle, pitching their tents among the hills, so as to obtain shelter from the inclemency of the latter part of the season.

The highest peak of the Moughodjar (almost 150 toises) above the level of the plain, is mount Aïrouk—a name signifying isolated, and it is in fact a very just denomination, as it is very much higher than any of the other hills. It is also called Airourouk or forked, on account of the two peaks which terminate the mountain. Generally speaking, the Kirghiz give very characteristic names to the spots through which they pass—as for example, the mountains lying to the south of the Aïrouk-tagh, are known by the name of *Iamantagh*, or bad mountains, those to the north, are called *Iakhchi-tagh*, or good mountains, the former, because they are almost destitute of herbage, whilst on the latter the Kirghiz find good pasture, and abundance of water.

The Moughodjar are evidently a continuation of the Gouberlinsk mountains, the union of the two chains may be seen between the fortress so named, and the fort of Orsk: it is near the same spot that the Oural has formed a bed for itself through the chain of rocks, and that it flows in a narrow channel between rocky and steep banks of the same nature and appearance as the mountains. The hills assume the name of Tachkitchou and of Caraoultepeh, separated at first by the Kir-gheldi, they re-unite at the distance of about 30 verstes from the Oural, from whence they extend to the south over an elevated plain, afterwards forming the Ourkatch, or mountains of the Our, thus called from the Our or Or, which flows at their feet. Near the sources of this river, the mountains Ourkatch join the Moughodjar mountains, which extend to the south-east. Two ranges of hills spring from the Ourkatch, one separates the basin of the Ilek from that of the Oural; the other separates the basin of the Ilek from those of the Tèmir, and the Emba. The Iakhchi-tagh lie on the right bank of the Our, and leave it to join the Karnadur hills, a name signifying the junction of the mountains.

The Moughodjar are the highest hills in the plain, inhabited by the Kirghiz of the lesser horde. They are the ramifications of the Oural, none of its branches, however, extend to the lofty range of the Altaï. The passage of the Moughodjar is about 6 verstes (4 miles) beyond these hills; the snow seldom falls in any great quantity; when the climate is hotter, and the soil more barren; stunted plants of wormwood of a dark colour are thinly scattered over a country, which appears in dismal mourning. In a space of 400 verstes from the river Kaoundjour to the Sir, we did not find a single stream.

On quitting this range of mountains, we crossed a level country of moving sand, with some few mounds or hillocks of clay, bare and utterly devoid of vegetation near their base; they were cut by deep fissures, which appear to have been excavated by water.

Supposing a level plain, with several brackish lakes, with a clay soil of a blue colour, so soft as to allow cattle to sink into it, with all the ordinary symptoms of having been once covered by the sea, a correct idea will be formed of the nature of the soil of this country.

The first plain of this kind which we met with, extended from the rivulet of Touban to the Kaoundjour in the bed of which we found only some holes full of water. The Kaoundjour, only flows in spring in a bed of from 4 to 5 toises. Every drop of water is precious in such a situation, and a Kirghiz never forgets where he has once found it in any period of his life. Our guide, Emantchi-beg, who had not visited these parts for 10 years, advised us to halt at the Kaoundjour, after a march of only 20 verstes; as we should not find water again nearer than Khodja-koul, a lake distant 15 verstes further. We were not inclined to believe him, as the Kirghiz who had an interest in delaying our march had frequently deceived us. We therefore continued our journey; the day closed, and we saw nothing of the lake. When night came on, which at this season of the year is generally dark, it became extremely difficult to find our road, which was hardly marked, even in the day. We could no longer see the tops of the hills, or Kirghiz tombs; objects by which the people direct their course. The more prudent of the party advised us to halt, and save ourselves and cattle from useless fatigue, and sleep, in place of seeking to allay our thirst; but as we had declared that we would go to the lake, we considered it necessary to persevere; several Kirghiz did all they could to prevent our losing our road; they dispersed in a line before us, endeavouring to discover some path, which is here a certain indication of being near water. A well, a hole filled with water, or lake, are points where the nomades of the desert assemble, and are the only places where even a path is discernible. We had already wandered for some hours in a dark night, and we became alarmed at having lost our proper direction, when suddenly, a Kirghiz in front struck a light, which had a great effect on our tired party; who now hastened to join the person who had fallen on this expedient of assembling the dispersed travellers. It is the usual mode followed by the Kirghiz in the desert, when they halt, to unsaddle and refresh their horses.

We followed our new guide for 3 or 4 verstes, and at 8 A. M. arrived at the lake, on the banks of which we halted, near several tombs; this was the first lake we met with in the desert.

All the tombs are of clay, mixed with chopped straw, except that of Khodja, which is of unburnt bricks. In the interior of these sepulchres there is another, smaller, where the Kirghiz pray. These monuments become more numerous as you approach the Sir, and appear like cities. The rich Kirghiz frequently bring artificers from Bokhara to make their clay tombs; they are very durable on account of the dryness of the climate. The custom is to construct these buildings on the most elevated spots of small hills; if not built of clay, the friends and relations assist in elevating these rustic sepulchres; and each must bring a certain quantity of stone or earth.

The Kirghiz, like all other eastern nations, have a great respect for the dead; generally all the relations of the deceased attend the funeral, except the women, who remain at home tearing their hair, and uttering loud cries. The relations, after the funeral, condole with the widows, who soon yield to their solicitations, and kill horses and sheep to entertain their guests. There never is with the Kirghiz an assembly, festival, or ceremony, which does not end in a great repast.

One of the greatest festivals with these nomades, is the day the head of a family has died, and particularly the first after it. The sons assemble the people of their acquaintance to the number of 3, 4, or even 600; and the pleasures of the table are always joined to the ceremonies of religion.

We soon quitted the banks of Khodja-koul, which were covered with reeds. In autumn, the lake is much reduced in size; but in spring, when the Kaoundjour overflows, it extends to a great distance.

We proceeded towards Coul-koudouk (well of the slaves), situated on the edge of the desert of Borzouk, 15 verstes of which we passed. It is entirely of moving sand, presenting the singular aspect of nearly perpendicular banks of sand, close to each other, and 3 or 4 toises in height; these change their situation with every gale of wind, some thorny bushes, herbs, and a species of *robinia*, grow here and there. The long roots of these plants resemble serpents; and when totally uncovered, extend on the sides of these moving hills.

We had great difficulty in riding through these deep sands; the more so, as our horses had become weak from bad forage. After our arrival at Coul-koudouk, we burnt 10 of our carriages; the materials of which furnished us for some days with a comfortable fire, free from the smoke of green bushes, which had been for so long our only fuel.

At Coul-koudouk there are several abundant springs, the water of which, had a mineral taste, and in the dry bed of a pond we collected

some bitter salt. Our Cossacks, guided by the Kirghiz, from a distance of about 2 verstes to the right, brought us common salt, which they found in layers of one or two inches thick.

The salt of these lakes is not so strong as our common kitchen salt, and is mixed with a great deal of earth, though perfectly white. From Coul-koudouk we met several of these salt lakes in the desert, and frequently a space of 10 verstes, is covered with a white efflorescence of a fine white powder, which rises in passing through it.

The 9th November, we halted near the hill of Sari-boulak, after having passed near Sirkanatji, the highest peak of the mountains of Moughodjar, to the little Borzouks sandy hills, or dunes, which commence to rise about 10 verstes from where we were, and resemble the great Borzouks. Where we crossed them,they were not more than 2 verstes in breadth ; the sand which was frozen did not appear to be deep. Both the little and great Borzouks are near the lake of Aral; these last have a northerly direction, and the other extends in greater masses between the lake of Aral and the Caspian, ending about 10 marches from Khiva. The country continued to undulate and the slopes were always very gradual, the armoise (mothwort) is the only plant which our horses had to subsist on, for from the Moughodjar there is no forage. After passing Akhchèkoudouk we saw to us a new species of thorn, well known in the desert under the name of *saksaoul.*

The Kirghiz and all the people who dwell in the desert set a high value on this plant ; the charcoal of which remains alive during half a day. If fire is made with the *saksaoul*, in the evening the embers slowly consume to a white cinder, keeping a gentle heat in the tent all night, this shrub is a species of the tamarisk ; it has a leaf like the juniper, a brownish yellow bark, the wood is very hard, heavy, and more easy to break than cut. The *saksaoul* is little more than two inches in diameter in this quarter;but near the Djan-déria it becomes a tree of a half foot in diameter, and 12 in height, and so numerous as to form perfect thickets.

The southern part of the Sari-boulak is remarkable for a great number of excavations, extending two or three verstes. The northern side of the hill is covered with worm-wood, and the slope is easy ; the south side is composed of barren clay ploughed up by torrents, or scooped into caves, surrounded by precipices 20 or 30 toises high. I climbed one of these eminences, and found layers three or four feet thick of little shells, as well as some fossil shells about 2 or 3 inches long, and a great quantity of the bones of fish, scattered over the sides of the hill. From the summit of the Sari-boulak, I discerned the hills of Kouk-ternak,which are at a distance of 60 verstes ; the sea of Aral approaches their base.

I remarked to our Kirghiz the traces I had observed on the Sari-bou-

lak of water having once flowed there, and they assured me that their fathers had seen the sea of Aral extending to the foot of this hill, though it does not now approach nearer than sixty verstes. So many Kirghiz have declared the same thing to me, that I can have no doubt of the fact, which shows how considerable and how rapid the decrease of the sea of Aral is; it still continues, and one of our guides recollected having seen the sea extend beyond Kulli and Sapak, places which we passed on the 14th and 15th of November, less than a year ago, the Camechlu-bach, a large bay of the Sir-deria, extended three verstes farther than at the time of our journey.

At about 25 verstes from Sari-boulak, we passed the solitary hill of Derman-bachi; it is known to the Kirghiz by the name of Termembés, and is so called by all their tribes, though it is common enough for them to give different names to the same place. The smallest of the hills we saw near the Termembès, and in fact all those we saw between the Sari-boulak and the sea of Aral, have their slopes, on the side towards the lake, intersected by ravines and destitute of grass. They present a mass of hillocks, barren and always round at the summit, whilst the slopes on the opposite side are gentle, and covered with wormwood; signs of the action of water on all these hills is incontestible.

Before reaching the Aral lake, we entered the Cara-coum, or black sands, a desert thus called without its being possible to assign a reason. All the sandy deserts offer nearly the same aspect. The Cara-coum is abundantly supplied with water, which is found by digging one or two toises. The Cossacks who preceded us, dug seventeen wells at Behrat-chaï-koudouk, containing but little water, each more or less brackish.

The Cara-coum extends to the lake of Aral, and in some places to the river Sir, far to the eastward, where it is much wider. In returning from Bokhara, I crossed this desert in eight days, about 268 verstes, that is from the Sir to the Irghiz. After having passed near the Sari-tchaghanak, or yellow bay, a creek of the Aral, we again entered into the Cara-coum, and did not leave it till near Camechlu-bach. The banks of the lake of Aral, from Sari-tchaghanak to the mouths of the Sir, are composed of sand hills driven up from the Cara-coum. To the south of Kouwan, sand is again met with, intersected at intervals by patches of clay extending to the lake. From the Sir-dèria, to Kouwan it is entirely of clay, flat and capable of cultivation, if water could be procured for irrigation.

The water had for a long time been so indifferent, that we thought that of the Camechlu-bach excellent; and, lying down upon the ice, we drank it with inexpressible plessure. The Camechlu-bach is a conside-

rable bay,formed by the Sir, about 50 verstes in circumference; it is the largest collection of fresh water we met with during our journey.

The morning after our arrival, I started with some of my companions and Cossacks to see the mouth of the Sir. We went round the largest half of the Camechlu-bach, and observed two places where the bay becomes narrower and joins the Sir. After having travelled about twenty verstes by the side of the river, which had been covered with ice for two days, we reached the spot where the waters of the Sir, mingling with those of the sea of Aral,contract a saltish taste, and the river begins to widen. At the distance of fifteen verstes it becomes forty toises in width; the delta thus formed is covered with reeds, and the water upon it is not above four feet deep, while the river itself is navigable as far as Kokan, and is probably many toises deep the whole way.

We did not quite attain our end, the height of Caraïar,and of On-adem, small promontories on each side of the mouth of the Sir, partly concealed the view of the sea of Aral. We were still about 20 verstes from the summit of these hills, and had already travelled more than 50, but as we had accomplished the principal object of our excursion by seeing the mouth of the Sir, we turned back again.

Near the Camechlu-bach and along the banks of the Sir, we met a great number of Kirghiz, who had fled from the cold of the northern steppe, to seek a milder climate. We also saw others who had been robbed of their cattle by the Khivians. Their destitute condition had obliged them to become fishermen and agriculturists—occupations which among the Kirghiz indicate extreme poverty. These two tribes, half savages, have alternately pillaged each other for the last 30 years, sometimes as aggressors, at others to retaliate. After this period they began to make use of flour in their food. Habit and economy soon taught them to consider it almost indispensable. They use, however, but a trifling quantity, and come for the purpose of buying it to the frontier towns of Russia or to Bokhara, and give in exchange sheep-hides, goat's and camel's hair. This appears to them a far pleasanter state of existence than the painful cultivation of the ground. Besides which, they have a great dread of becoming serfs of the soil, and consider it the height of felicity to be as free as the birds of the air. This is their favourite comparison, when they speak of their wandering life.

It is therefore easy to imagine why Kirghiz in easy circumstances never cultivate the ground—besides which they have an ancient tradition which says "The Kirghiz shall lose their liberty whenever they begin to live in houses, and to follow agricultural pursuits;" and the tradition acquires new strength from the example of the Bachkirs, of whose

fate they entertain a great dread. None therefore but the poorest Kirghiz, who have nothing to give in exchange for corn, raise it for themselves in a few spots near the Ilek, the Emba, the Irghiz, and the Or, in the valleys of the Moughodjar and Ourkatch mountains, along the banks of the Khodja-koul, and of the Ak-sakal, near the Camechlu-bach, and the Sir-deria, and above all between the Djan and the Kouwan-deria, inhabited about 15 years since by the Cara-Calpak, or Kara Kalpak (black cobs) Tartars.

They prefer the spots where the water collects during the rainy season, or from the melting of the snows, and often seek a soil which can be irrigated by means of small canals—the fields near the Sir and the Camechlu-bach are thus situated. In other instances they conduct the water of a river into reservoirs, out of which they draw it to water the lands. This laborious mode of cultivation is followed near the Emba and the Irghiz, and does not allow the fields to be of great extent—indeed they are to be seen only a few toises square. The Kirghiz sow them with millet, which produces a hundred fold, and very rarely, if ever, disappoints the cultivator.

Near the Sir, there are canals five and six feet deep, and dug before the Kirghiz, who I consider incapable of so arduous a work, had established themselves in the country. Fields of a much greater extent are to be met with there—the Kirghiz cultivate oats and barley—they sow the first in autumn and the other in the spring. There are also a few melon grounds, and they preserve their crop in small pits under ground. The fodder for the few horses and cattle they possess, consists of the leaves of the young reeds, whose growth is accelerated by burning the plants of the former year, giving a most hideous aspect to the banks of the Sir.

The embassy arrived on the 19th November, on the banks of the Sir-deria, opposite the hill of Cara-tepèh; during the last 15 verstes, we had crossed a large plain covered with reeds, and constantly overflowed during the spring.

This plain extends about 80 verstes from the mouth of the Sir. It is 10 or 15 verstes in breadth, and in some spots, especially close to the banks of the river, the reeds give place to very fine grass. After passing through this plain, we again saw the sandy plains of the Cara-coum, extending almost as far as the Sir, and running parallel with it for the space of 150 verstes.

Water is very abundant in the Cara-coum; it is principally inhabited during the winter. The Kirghiz then retire with their kibitkas into some hollow, where they are sheltered from the wind. Near the Sir-de-

ria, the usual retreat of the poor, misery had multiplied the number of robbers, and in crossing this part of the country, we perceived on the tops of the hills, Kirghiz who appeared to be watching an opportunity of seizing upon some straggler, or our horses. The guides had warned us, and we kept on our guard.

The Sir near its mouth is about sixty toises in breadth—fifty verstes higher, its width exceeds 150 toises. It is rapid, and navigable, at least as far as Kokan. Some of the Kirghiz told us it was fordable about 150 verstes from its mouth—only during the very great heats. Others declare it cannot be forded at any season of the year.

Chapter IV.

Manners and Customs of the Kirghiz—Election of the Chiefs—their Dissensions—Examples of Cruelty—Severe policy of the Chinese, with regard to the Kirghiz.

The countries watered by the Sir, are the paradise of the steppe of the Kirghiz, who are proud of the existence of so large a river in their territories. To pass the winter with their flocks, on its banks, is the object of their most ardent wishes. The cold is much milder there than on the banks of the Ilek, the Or, and Irghiz; and also than the Moughodjar and Dourgatch mountains, and the sandy plains of the Cara-coum. On the banks of the Sir, the frost is never sufficiently severe to kill the cattle, nor to incommode people living in their habitations of felt—but during the last six years, the rich Kirghiz are deprived of the pleasure of spending the winter on this favoured spot, as their enemies, the Khivians, come and plunder them whenever they have the opportunity.

The Kirghiz delight in wintering amidst the reeds, which grow so thick as to afford a shelter from the storms of wind, which occasionally occur. The wandering tribes are generally of a melancholy disposition, and the murmur of the waters of the Sir has a charm for their idle moments, which are in fact pretty numerous. In truth, nothing disposes the mind to revery more than the sound of a river, which, like time, runs its course with a monotonous rapidity. The Kirghiz often pass half the night seated on a stone, gazing at the moon, and singing melancholy impromptu words to airs not less so. They also have historical songs, which celebrate the great actions of their heroes, but these are chaunted only by professional singers, and I greatly regret not having heard them. I often told the Kirghiz I would willingly hear their

songs ; their impromptus were merely compliments, and did not deserve to be remembered.

These children of the desert have remained perfectly independent of foreign manners or civilization, except in religion, which, it is perhaps needless to observe, is the Mahomedan of Sunni sect. After having seen the Kirghiz, a correct opinion may be formed of the nomade life—highly prizing his liberty, and despising every thing that can impose a restraint on his actions. Undaunted, warlike and ferocious, the Kirghiz, on horseback and alone, fearlessly enters the desert, and traverses five or six hundred verstes with the most astonishing rapidity, to see a parent or friend in another tribe. In his journey, he stops at almost every oba (camp) he meets, gives what news he may have, and is certain of a kind reception every where, even when not known; he partakes of the food of his host. This is generally krout (cheese known in Persia and Afghanistan by the name of *punneer*), haïran (tyre of India) meat, and when they have it, koumes, a drink prepared from mare's milk, and much esteemed in the desert. He never forgets the appearance of the country through which he has passed, and returns to his own home after some days stay, with abundance of new stories, and enjoys himself with his wife and children till some new object calls him away. The women are his only servants ; they cook, make his clothes and saddle his horse, whilst he, with the most perfect nonchalance, confines himself to the care of his cattle, sheep and horses. We saw the brother of a sultan, much respected among the Kirghiz, leading his sheep during 15 days, mounted on a good horse, and dressed in a red cloth cloak, without considering it derogatory to his dignity.

The Kirghiz are governed by elders, heads of families, begs, behadirs, sultans and khans.

The title of beg, properly speaking, is hereditary, but any person who cannot support his situation by his talents, courage or conduct, soon loses it ; whilst those who make themselves respected, obtain it either from the habit people acquire of calling them sultan, or by an assemblage of the tribe, who confer this honourable distinction.

An elder is generally an old man, whom the people have been in the habit of consulting ; he must be rich and have a numerous family—he must possess these two requisites ; besides a solid sound judgment. Whatever may be the moral character of a Kirghiz, if he is rich, he will always have friends, and will be powerful according to the number of his family.

The behadirs among the Kirghiz, are more celebrated for their courage, of an enterprising and clear judgment, and act as partizans during a war.

The sultans are the relations of the khan; who always exercise some influence among the Kirghiz. They are likewise called, *toura*,* and this title always ensures them great respect from the lower orders. But without merit, they will possess no power among the tribe, who will not be commanded without some great personal quality.

The khan has in fact the power of life and death among the Kirghiz, who have no security against his tyranny, except public opinion, and no where is it so powerful as among the pastoral tribes. The discontented party quickly desert an unjust judge, and choose another for themselves. The khan is consequently obliged to follow the established customs, and to conform to the laws of the Koran. This conduct increases his power. He, however, takes care to keep a *mollah* entirely devoted to his interests, and who will explain the laws according to his wishes; and as the sacred volume and its commentaries are susceptible of many divers interpretations, the khan knows how to take advantage of it to authorize proceedings he would never otherwise venture upon. He also is careful to be surrounded by counsellors, usually, all Kirghiz respected by the tribe, and he endeavours to render himself popular with them by means of flattery and presents. However all these precautions would be insufficient to overcome the natural inconstancy of his subjects, if he did not also insure their favour by his activity, boldness, courage, and also excite their awe by occasional acts of severe justice when indispensably necessary. The power of the khan therefore depends upon the general consent of the people. When he has once received that, he may reign despotically, as long as he acts for the interests of the people; his power is limited by the public opinion on that head, it is necessary it should be in his favour to enable him to govern. Woe to him who would strive to brave it—the same power that established, would not fail to overturn him.

I saw the following instance of the cruelty of the Kirghiz: several of the people that accompanied us, fancied that in a beggar whom we met, they recognized a robber of their tribe—they took away his horse, tied his arms, and wanted to cut off his head, though they had no right to do so. They only waited for the order to be given by a young sultan to whom their chief had delegated his authority, and they had sent to solicit it. Permission was, however, refused, and the beggar was set at liberty; but had great difficulty in escaping from the ill usage and abuse with which he was assailed.

I was witness to another case which shows their ferocity. The sultan Haroun-ghazi who accompanied us, caused the march to be led by several hundred Kirghiz—and they unknown to us, attacked the hamlet of the sultan Manem-beg Djanghazi, one of the enemies of Haroun, and

* This must mean tera or branch.

attached to the party of the khan of Khiva. Manem-beg, warned in time of the intentions of his adversary, had prudently fled—but his wives, his brother Iakach, and all his flocks fell into the hands of Haroun-ghazi. We saw them near the Sir-deria—the flocks were sent into Bokharia, and the women confined in their tents on the banks of the river, were delivered up to the brutality of the brother of the sultan.

So far from pitying these unfortunate captives, they only laughed at them, and said it was the right of the conqueror which no person could dispute. Iakach, guarded by five Kirghiz, and mounted on the worst horse they could find, followed Haroun-ghazi, who would never consent to see him. Iakach had served as a guide to the Khivians some months before, when they had plundered Haroun-ghazi. This unfortunate person was only twenty-two years of age, of a prepossessing appearance, and seeing the fate that awaited him, had a melancholy and downcast look.

An old Kirghiz presented himself before the conqueror, and thus addressed him—"My sons were massacred by Iakach during the excursion of the Khivians; the institutions of God and man direct that the dead should be avenged." The law of retaliation is firmly established among the Kirghiz. Haroun-ghazi was obliged to deliver up his cousin, whose death was instantly decided on. The old Kirghiz approached Iakach, who was mounted, snapped his gun close to his back; it missed fire; but other Kirghiz fell on him, taking off his clothes to prevent their being dirtied; and deaf to the prayers of their victim, they cruelly cut his throat like a sheep, with one of the small knives which they always carry with them; thus satiating the revenge they had vowed against this unfortunate young man.

The Kirghiz are very passionate, the most trifling cause, and frequently an unsuccessful attempt, is sufficient to excite them to the most cruel revenge.

These people have for several years been molested by the Khivians, which induced them to solicit the aid of the Bokharians, several of whose caravans had also been plundered by these banditti; the Kirghiz supposed the government of Bokhara would not fail to lend their assistance. Deceived in this expectation they became furious—one of their chiefs cut off the tail of his horse, and came to the minister at Bokhara, saying, "as this tail has been severed from my horse, so am I from you; henceforth consider me your implacable enemy." He departed shortly after with two or three friends, and carried off eight camels and two men. They commenced the first hostilities, which this man alone dared to declare against all Bokhara. His ferocious and violent conduct gives an idea of the daring character of these people.

The most trifling motive is sometimes sufficient to induce the most honest Kirghiz to indulge in his favourite passion for pillage; so firmly is the spirit of rapine rooted in the hearts of these people. The great and little horde, have for the last fifty years been subject to a government, a little more settled, and now enjoy a greater state of tranquillity than the other Tartars. It is to a warlike spirit, and indifference to the fatigues of long and fatiguing marches, but above all, the fanatical spirit so prevalent among this rude people, which their chiefs know well how to excite, which renders them so fit for any dangerous enterprize. It may be easily imagined, then, after a severe winter, which is attended with great hardship and loss to the Kirghiz, their shepherds assemble to make an irruption, or establish themselves under a milder sky, such as Bokhara, so celebrated by them, and so much more fertile and beautiful than their own deserts. Thus the emigration of these barbarians may again take place into countries where artillery is little used, and regular troops unknown.

I will finish this digression on the subject of the Kirghiz, by a remark, that they never make use of this name among themselves ; they invariably style themselves *Kasak ;* which, according to some, signifies horseman, and to others warrior. They say the Bachkirs call them Kirghiz, but are ignorant from whence the name is derived, and it is used only in speaking of the great horde. This tribe has no khan, and is governed by different sultans; many of whom have sought the protection of Russia, others that of China, but their sole object is to obtain presents and assistance from either party. The Kirghiz of the great horde greatly fear the Chinese, whose severe and even cruel policy is, however, justified by necessity. A Chinese caravan was plundered near the frontiers of Soungarie, garrisoned by the advanced posts of the Mandchous Tartars. The Chinese retaliated, and thousands of the Kirghiz, innocent as well as guilty, paid with their lives this agression. Some such examples have put a stop to the agressions of these tribes on the frontier of the Chinese empire.

In the other two hordes, the khans ought to be confirmed by the emperor of Russia, who exercises a great influence in their election, and they swear fidelity to him.

The tribes of Turkoman now pay a tribute to the khan of Khiva and Bokhara ; probably one day the Kirghiz will be obliged to do the same to Russia. But it is necessary, in the first place, they should find the advantages of her protection, in defending them against the irruptions of the Khivians.

Chapter V.

Passage of the Sir—Bridge of reeds—Hunting the wild-boar—Ruins—Drying up of the Djan-deria—Route passed—Kizil-coum—Plunder.

In the month of June, the melting of the snow on the great range of Aba-tagh, swells the waters of the Sir-deria,and overflows the lands on each side, which are so greatly fertilized by it, that grain is produced with very little trouble. Fruit trees, willows, plane trees, also thrive, and it appears capable even of producing the silk-mulberry and cotton. At the time of our journey, the river was frozen, and we crossed it with the greatest precaution. The ice gave way after the passage of our two guns. A camel even broke it with his weight, and was got out with the greatest difficulty. The Kirghiz burnt bundles of reeds, and spread the ashes on the ice, to prevent the camels sliding. At last, after much noise and quarrelling, we passed the Sir, so celebrated in antiquity under the name of the Jaxartes.

On our return in the month of April, the passage was much more slow and difficult. Two boats which we carried with us served as a raft to transport our artillery—the horses were swam over. Three large Kirghiz boats used to ferry over caravans, served to transport our provisions, on the payment of a trifling sum. These boats were built of the wood of the poplar, without iron, and very frail ; they had been brought from Khiva by the lake of Aral. A water communication exists between Khiva and the Sir, used by the poorer Kirghiz, as a simple coasting trade. The boats are sometimes brought from Turkestan, where they are dearer than at Khiva.

The camels were swam over, and it was a singular sight to see ten or twelve of these animals tied together, and directed by naked Kirghiz of the most athletic forms ; sometimes they held hard on the camels, or swam by them shouting to encourage the beasts. They continued this work nearly a whole day, three camels were drowned, but brought on shore, and having their throats cut with the usual Mahomedan ceremony were eaten by the by-standers.

In swimming, the camel leans on one side, so as to present a greater surface to the water; his hump appears to assist him, and is always nearly covered with water. The passage of the river on our return kept us two whole days.

On our march towards Bokhara, we crossed the Kouwan-deria with great ease, the ice being sufficiently strong. It is a branch of the Sir, very rapid, and the banks covered with reeds; it may be about 20 or 30 yards broad, and from 5 to 10 feet deep, the water is particularly clear.

On our return we halted at a part of the same river (Kouwan-deria)

where there were the remains of a bridge of reeds, and re-constructed for our convenience of great façines made of this plant tied together, and laid on cables of the same materials fixed to posts firmly planted into the opposite banks—these façines were attached with strong ropes and a second layer put on. In this manner they formed a bridge, over which camels passed with safety fully loaded; we were not however without fears that the current would carry away this new kind of floating bridge.

Sometimes in place of reeds they employ bales of cotton so tightly tied, that the water penetrated very little into the material.

The land between the Sir and Djan-deria is covered with sand-hillocks of 3 or 4 toises in height, resting on a bed of clay; after passing an extent of clay-soil, you frequently again enter a tract of sand.

On leaving the Sir, we crossed a plain covered with reeds, evidently overflowed, which obliged us to make several circuits; the Kouwan which we followed for 4 days, flows in a clear stream, through beds of sand, which extend to 25 verstes of the place; we passed it, on going to Bokhara; and it approaches much nearer in some places. On our return, we came on the banks of the Aralu-Koullar, lakes which run parallel to the Kouwan, to the place where the Djan-deria detaches itself; some of the sheets of water are nearly 10 verstes in circumference, whilst others are mere holes filled with water—they dry up in summer, and the beds are then cultivated by the Kirghiz.

This is the least barren part of the steppe, and the marks of extensive cultivation are still seen in fields which were tilled by the Cara-calpaks, as late as 1806. These people, of the same race as the Kalmouks, poor and powerless, were unable to resist the incessant incursions of the Kirghiz. After having in vain solicited the aid of Russia, Khiva and Bokhara, they abandoned their fertile fields, and removed into the territories of Khiva and Bokhara; thus divided, they now wander, one party to the south of the lake of Aral, subject to Khiva, the other under the dominion of Bokhara, have their station to the west of Samarcand, and north of Sarewchan. Not being rich, and possessing few camels, they use carts drawn by oxen or horses.

The Djan-deria is bounded on each side by plains of clay, here and there intersected by sand-hills, which extend to the Kouwan and Kizilcoum.

In this plain there are several thickets of the *saksaouls*, affording cover to different kinds of beasts of prey; wolves, tiger cats, and even tigers. The Kirghiz informed us that they have been obliged to withdraw their flocks from this quarter, to prevent their being destroyed by these animals, not venturing to attack them when they are in numbers

together, should they appear singly, then 20 or more men will assemble, armed with matchlocks, near the reeds where the tigers hide themselves, and set fire to them; the heat and smoke forces the tiger to quit his haunt, when he his shot by the hunters. We had seen something of this kind of hunting on the banks of Aralu-koullar and Kouwan-deria, which are likewise covered with reeds, and swarming with wild hog, of which we killed a great number, one day no less than eighteen in less than three hours.

This mode of hunting offers a very singular spectacle to Europeans. In the midst of a great plain covered with reeds, rise columns of smoke and flame, through which may be seen a hundred Cossacks riding their horses at full speed, sometimes before us and then behind; our horses frequently leading us directly on these ferocious animals, who plunge into the swamps, or suddenly disappear into the reeds, to return with greater fury on the hunters. Shots from guns and pistols are heard on every side, with the neighing of the wounded horses, which were instantly purchased by the Tartars to eat. The Cossacks enraged, were every where attempting to spear the hogs; one officer of Cossacks, offended at being told he feared the chase, dismounted and laid hold of an immense boar which had been wounded, and fired his pistol close behind its ear. To comprehend the scene, it must be witnessed; no description can convey an adequate idea of boar hunting in the desert.

I cannot describe to the reader the pleasure we experienced in again finding ourselves among wood, the rustling of the wind among the branches, and a confined horizon, might be said to be for us a novelty, recalling a fond recollection of our country. It is in the deserts and among nomades, that the true happiness of an European life is felt.

The ruins of old canals are still to be met with in this country; proving that it was once much better peopled than at present.

Aboul-ghazi, khan of Khiva, generally passed some months of the summer on the banks of the Kizil-deria, celebrated for their fine pastures.

In no part of the Kirghiz steppe, are to be so frequently seen traces of ancient habitations as on the banks of the Djan-deria. I have seen the ruins of Koul-tchomktau, which is composed of elevations of earth of 150 toises in length, and the highest may have 3 toises (18 feet) in height. It is clear these buildings, whatever they may have been, were built with sun-burnt bricks; near these ruins are small canals about 1 toise or 6 feet broad and two deep; a great quantity of broken pottery is also to be met with. These ruins are about 15 verstes from the Djan-deria. The Kirghiz could give us no account of their use or date, but

supposing they must have been erected by the Nogaïs, the name by which they call the people, who occupied these steppes before them. They also stated that these ruins are much more numerous in the eastern part of the Kirghiz country, and are also met with on the Tobol, the Ilek and Emba, those in the best preservation and most celebrated are those of Djankend, which they suppose to have been the residence of the Ouz chief. Djankend, situated about 40 verstes from the mouth of the Sir, between that river and the Kouwan, was built of burnt-bricks. The ruins are surrounded with canals of irrigation and cultivated fields of far greater extent formerly than at present.

The Djan-deria is probably nothing more than the ancient bed of the Kizil-deria; it is also possible, this river might have also flowed more to the south; for, 40 verstes in that direction from the Djan-deria, we found the traces of the bed of a great river. The Djan-deria was a considerable river even in 1816, of greater dimensions than the Kouwan. At present its dry bed only marks the former course. It may be 100 toises (600 feet) broad, and the banks 18 or 24 feet in height. A few holes here and there filled with water alone mark this once great river. This drying up has much astonished the Kirghiz, who are ignorant of the true cause; some attribute it to the construction of a dam to throw the water into the Kouwan at the spot it separated from this river.

Others suppose the bed has been filled with sand from the Kizil-coum, which appears the most probable; they may also account for this unfortunate drying up of the water to the great extent lost by evaporation and absorption into the sands of the desert. Whatever may be the cause, it is a most surprising fact, that the Djan-deria has disappeared. The water still found in the old bed, smells a little of sulphur, and is the most unhealthy we met with in our journey; it was still more dangerous from our not being able to replenish the supply during 5 days march in the great desert of Kizil-coum, which must be crossed to go to Bokhara. This water occasioned pains in the stomach to all our soldiers, and to some the most violent cramps. One died in strong convulsions.

We left the Djan-deria on the 3d of December, and found ourselves on the great road which leads to Bokhara. I call it the great road, for it was a track about 3 toises wide, and very much beaten by the multitude of travellers in that direction. The road first passed through a small forest of *saksaoul;*—it was less distinctly marked along a clayey plain which ends at the distance of about 57 verstes from the Djan-deria, and was again very visible in the Kizil-coum, where it crosses valleys formed by sandy-hillocks. This road is very much frequented by all the caravans which travel from Bokhara to Orsk, or to Orenbourg, and by all the

Kirghiz of the western side of the steppe who carry cattle to the markets of Bokhara, they take care to cross the Kizil-coum at the narrowest part and on their return, they provide themselves with water from the famous well of Boukhan, situated at the southern extremity of the desert.

The banks of the Djan-deria form a line of distinction in the nature of the country between Orenbourg and Bokhara; the clay, without being more productive, on account of the dryness of the climate, is much stronger; and the soil here rests on argillaceous rocks, whilst those of the steppe have for a base sandstone or lime.

The climate also is very different. Land tortoises, rare to the north of the Djan-deria, are very common in the Kizil-coum; very little snow falls during the winter, and it never remains long upon the ground, so that every thing denotes a warm climate. The banks of the Kouwan, and the Djan-deria are inhabited, principally in the neighbourhood of the sea of Aral, by some Kirghiz tributary to Khiva.

The barrenness however, is perfectly astonishing; from the Djan-deria, to the place where cultivation recommences, not a single river is to be met with in a space of 500 verstes, and water is only to be obtained from wells—sometimes abundant, sometimes the reverse; but in general containing brackish water.

At the spot where we crossed the Kizil-coum, it was 100 verstes wide. Its length is very considerable—for it extends from the Sir-deria, where it is much wider, to the sea of Aral and to the Amou-deria. This desert is remarkable for its sterility. Spring water is no where to be met with. It is said that there were formerly three wells near the road which we followed, and that they were filled up to prevent their being resorted to by the robbers, who generally remained in ambush among the surrounding hills. The robbers have actually been expelled from the Kizil-coum, but they at present hide in the ravines of the Bokhara mountains, and when they feel themselves strong enough, fall upon the travellers passing that way—pillage, and sometimes kill them, if they make any resistance.

The well of Boukhan, is at present as dangerous as the Kizil-coum used to be; particularly as it is the part of the road between Bokhara and Orenbourg, that is nearest to Khiva, and the Khivians are constantly on bad terms with the Bokharians, or the Kirghiz, or sometimes, as in the year 1820, with both at the same time. Our party therefore was on the alert, and patroles were sent into the defiles of the Boukhan—fortunately we achieved this dangerous passage without any accident—but 10 days afterwards a caravan of Bokharians and Kirghiz, was pillaged by

the Khivians, who assembled at the well of Boukhan, fell upon them, and pursued the fugitives as far as the Kizil-coum, where they met, and engaged with a troop of Kirghiz. On our return we found on the road the bodies of more than 100 people who had perished on the occasion of this irruption of the Khivians.*

Almost every day we met with caravans of Kirghiz coming from Bokhara; who, after selling their sheep, brought back barley, tobacco, meal and cotton, from that town. We felt much pleasure in conversing with these *bazartchi* (that is to say people returning from market), and felt great interest in hearing accounts of Bokhara, and enquired how long it was since they had left the city. We considered ourselves very fortunate in being so near the end of so long and troublesome a journey, of which we were beginning to get heartily tired.

We had travelled in the Kizil-coum, from 42 to 46 verstes (30⅝ miles) a day—the marches were very long, as we were constantly encountering deep sand-hills—it was absolutely necessary we should not loiter, so as to be too long without the opportunity of getting fresh water.

Our horses had met with very indifferent forage in the Kizil-coum, and were becoming visibly thinner. The Bachkir horses were skeletons, and could no longer draw the six waggons that remained of 25 which we brought from Orenbourg, and we were obliged to replace them by Cossack horses, which had until then been employed to carry forage. All our people, and particularly the foot soldiers, were much emaciated—in short it was absolutely necessary we should arrive very shortly. We carried ice, and the water of the Djan-deria in leather bags, or barrels, notwithstanding it was very difficult to convey sufficient water for four and a half days, for our numerous party of men and horses.

On our arrival at Iouz-koudouk, one of the baggage horses drank to such excess that he fell, and was not able to rise for several hours. Notwithstanding these numerous inconveniences, not one of our saddle horses died, but we lost almost all the cart horses; particularly one day, when six were so perfectly exhausted, they could not follow us.

From the Djan-deria to Iouz-koudouk, the distance is two hundred and eleven verstes (51 leagues), which we traversed in five days with the artillery, through a sandy desert, destitute of water and grass, that after having performed 1000 verstes with the greatest celerity, camels carried our infantry by turns; but after all it was very difficult for a military body to accomplish such a march in so short a time.

* Two pages of my copy of M. Meyendorff's work are here lost.—*Translator.*

Chapter VI.

Gold Mines—Aghatma—Fine country—Reception by the inhabitants—European prisoners—Interview with the Couch-beghi—Entry into Bokhara.

After passing the Kizil-coum, we crossed a plain covered with absinthe, bounded on the right by the mountains of Bokhara. The Bokharians, who accompanied us, dreaded a surprize from the Khivians; as they said it was to take the nearest road to Iouz-koudouk; this prevented our examining the mountains of Boukhan, which I was not able to do till our return the next spring; like the mountains of Moughodjar, they rise to the height of about 600 feet above the plain, very much scarified, rocky, composed of quartz, mixed with sienite and diabase, forming numerous, but very narrow glens. Near the wells of Boukhan, a small spring runs from the mountains, which disappears a few hundred toises in the plain. The best road, and the shortest, is however that which runs from the Kizil-coum, near the mountains, to Iouz-koudouk.

After passing the plain, I have just mentioned, we entered an elevated district, through which runs the mountains of Boukhan, Iouz-koudouk Kapkantach; which are ramifications of the great range situated to the south of Khokhan and east of Bokhara.

Near the wells of Boukhan, this chain turns to the west, extending to the Amou-deria, separating near its banks into the hills of Tchavaswali and Vasilkara, famous for their rich veins of gold. It is said, this induced Peter the Great to send the expedition of Bekevitch. At present the khan of Khiva forbids the working of the gold mines of Vasilkara, not to attract the cupidity of the Russians. There is perhaps exaggeration in these stories, as I saw at Orenbourg a piece of sulphureous pyrites, found at Vasilkara, which might have deceived people, who take every shining yellow substance for gold.

The mountains which we had just passed are composed of sienite and diabase, or greatly mixed with calcareous matter, they were generally of a dark green. These stones split into their flakes like slate, and the hills have a much more rounded appearance, and less conical than those of Moughodjar. The soil and the valleys are also more sterile, even the absinthe is very rare.

In some places, the road is rugged, in others open, and easy for carriages. Iouz-koudouk, or the hundred wells, is a valley, where there are two wells about 18 feet deep, affording abundance of excellent water; besides thirty others, small, and generally dry.

The mountainous region commences at seven verstes, below Iouz-

koudouk on the road we followed, and extends about thirty-four verstes to Kapkantach, when we again entered the plain, leaving on the left the Bech-boulak, or Bukbouldouk, a low hill. Bukbouldouk signifies a quail, a word invented by the Kirghiz, in imitation of the cry of that bird.

At Kapkantach, there are several sulphureous springs, with a strong smell, and very saltish; our horses would hardly drink it, but on our return in the spring, a horse emptied five buckets of this nauseous water. As the weather was very hot even at this season, the men suffered from thirst, and we had great difficulty to prevent, even for a few minutes, our soldiers from drinking this detestable liquid, which at the same time was very cool.

At twenty-two verstes from Kapkantach, commences the sands of Batkak-coum, which are twenty-eight verstes broad—there are, however, only the four last which are heavy—twenty-six verstes from these sands, we again entered a hilly country, which is called Sousiz-cara, (black without water). These hills are in fact of a black colour; the surface perfectly bare, water is found in two wells, which we left ten verstes to our left. Our water being expended, we made use of the snow which lay in our route, principally on the hills, where, notwithstanding their slight elevation, we experienced a very sensible change in the temperature. We at last arrived at Cara-aghatch, after having performed the last forty verstes over a flat country, though surrounded with hills.

Two verstes from Cara-aghatch, four custom-house officers met the mission, and after a salutation, addressed us the usual compliments of *khoch amedid* (you are welcome), informing us that the khan had sent provisions for us to Aghatma, distant thirty-eight verstes from Cara-aghatch. Monsieur Nègri politely expressed our gratitude, we resumed our journey and arrived with these officers at Cara-aghatch.

It was in this place we saw for the first time trees; about a hundred old mulberry bushes growing round a spring of sulphureous water—the heat of which was nearly 15 degrees of Reaumur, 66° Fahrenheit. Some Mahomedan saint planted these trees—near which he had lived, and is buried there.

The water is said to possess some miraculous qualities; all the Mahomedans of our party bathed in it. The spring issues from a low hill of clay, and all the bushes are covered with pieces of cloth and rags tied on the branches as an offering to the saint.

The water of this spring is very abundant, forming a little brook, which is however soon lost in the clay soil. Notwithstanding we had

been marching without intermission for four days, we set off again on the fifth, to get out as soon as possible of this barren region, and enjoy the provisions prepared for us by the khan of Bokhara.

We arrived at Aghatma the 25th December, after having crossed the Cara-aghatch, a mountain of considerable height, whose slope is very gentle towards Aghatma. The Bokharians say that in this place there was formerly a city, which a neighbouring hillock covered with broken bricks appears to confirm. Aghatma is a kind of basin, with some appearance of having been once flooded, forming a lake which supplies this city with water.

There are still two strong springs of sulphureous water, but not so hot as those of Cara-aghatch. We remarked at Aghatma, a small tower or hut of mud with a vaulted roof, serving as a kind of advanced post towards Khiva: here the Bokharians keep a guard when they dread an excursion of the Khivians, or the arrival of a caravan from Russia; the sentinel placed on the roof, commands an extensive view of the country round.

On the road to Aghatma an officer of the khan, having the title of *Iouz-bachi*, with about 20 horses met the ambassador, informing him he was directed to be his conductor to Bokhara, and provide every thing the mission could require. Several of the horsemen then approached Monsieur Négri, and took his hand in the European manner.*

We here quitted the desert, through which we had performed a tedious and monotonous journey of 70 days. The desert ends at these last mentioned sandy plains, beyond which we found ourselves every where surrounded with villages, gardens, plantations, mosques, &c.—in fact, we appeared to be suddenly transported into a fairy land.

If the appearance of this country excites feelings of admiration in Europeans accustomed to the sight of populous and well cultivated fields, how strong must be the impression produced upon the Kirghiz, and other inhabitants of the desert? How is it possible they should not long to invade a country so much favoured by nature, and which in summer would afford them vast plains for the indulgence of their wandering habits—whilst in the winter they could take refuge in the numerous towns and villages from the inclemency of the season.

Every thing excited our curiosity in this country, which is almost unknown to Europeans. It may be imagined with what interest we contemplated the oriental tribes, dressed in their blue clothes, and white turbands, who flocked to meet us—some mounted, others on foot—some riding on horses, others on asses—who crowded round us, saluting us after the fashion of this country. Several showed their joy on ap-

* Here, also, is a hiatus of two pages of unimportant matter.—*Translator.*

proaching us, by addressing us a few obliging words in the Russian language. Their signs of astonishment—their cries, and in fact, the tumultuous agitation of the whole crowd, gave our entry into Bokhara the appearance of a festival, which we should have enjoyed, but for the presence of the people connected with the police—whose voice sounded above all the tumult, and who armed with great sticks, struck indiscriminately on every side to make room for us. The sight of this violence saddened us when we remembered that our arrival was the occasion of all this confusion, and that the wish to see so many Ourousses was stronger than the fear of blows.

It was with feelings of the most painful nature, that we observed, in the midst of this Asiatic population, some Russian soldiers reduced to the sad condition of slaves. The greater part of them were old and infirm; at the sight of their countrymen they could not restrain their tears; they faltered out a few words of their mother tongue—they strove to cast themselves among us—so great was their emotion at the sight of our warriors. It is impossible to describe these affecting scenes which wrung our hearts.

We were informed at Khatoun-koudouk that the Couch-beghi, one of the principal officers of the Bokharian government, was waiting for us at the next village—at the distance of about a verst, from where cultivation begins, a chief of 100 men, Pendja-bachi, came to meet us with 200 horsemen. He led us through the crowd, and our infantry, beating drums, marched to the tent where the Couch-beghi was seated. We dismounted about 30 toises from it to advance through two rows of foot soldiers seated on the ground, who rose when the chargé d' affaires passed. We saw several tents of different colours, a great number of richly caparisoned horses, covered with chabragues embroidered in gold were picketted, tied by the head and the hind feet; the tents were surrounded by officers and slaves; and, in short, every thing that surrounded us added to the solemnity of this our first interview.

The Couch-beghi, named Hakim-beg, was seated in his tent with four Bokharian noblemen; when Monsieur de Négri had taken the seat assigned to him, the chief addressing himself to the persons attached to the embassy, said "Be seated, for you are strangers to us, and we feel great pleasure in seeing you." M. de Négri having afterwards conferred with the Couch-beghi, about the ceremonies to be observed on his presentation to the khan, did not agree entirely with that officer. The audiences had begun under most favourable auspices, but before its termination, the Bokharian character was completely unveiled. The Couch-beghi was so indiscreet as to request M. de Négri would present

our two pieces of artillery to the khan ; when he found he was unable to obtain them, he did not hesitate to ask for M. de Négri's carriage for his master ; yet he was not ignorant that we had several camels loaded with presents for the Court of Bokhara.

The Couch-beghi might have been about 50 years old, his long dark brown beard was beginning to turn grey. He was tall, the expression of his countenance pleasing and benevolent. He spoke with great ease in Persian, wore a white Cashmere shawl for a turban, a khilaut of the same material,figured with large flowers,and a sable pelisse, covered with striped cashmere.

Our journey had been as pleasant as we could have wished. With the exception of some foggy days, and a few hours of snowy weather or drizzling rain, the weather had been generally so fine, that the Kirghiz said we had doubtless a saint in our party. This continued fine weather, rendered our march much easier, by preserving us from all the discomforts that would have been caused by rain, snow and cold.

We passed the night of the 17th of December, near a small town,called Wafkend, after passing through a well-cultivated and populous country, the same flourishing appearance continued the following day, when we arrived at Bazartchi, a large town about two verstes from Bokhara. We had travelled 40 verstes since our interview with the Couch-beghi, and during the two last days we were constantly surrounded by a crowd of people. The police were constantly driving them off with their sticks, the most inquisitive allowed themselves to be beaten, fled and then returned to the charge. Our soldiers marched in the greatest order, they were in complete uniform, and the beat of their drums, which was heard every now and then, caused exclamations of astonishment from the crowd. We pursued our course in the midst of tumult, and public marks of the joy excited by our arrival.

Near Wafkend, four chiefs paid a complimentary visit to Monsr. Négri, delivering a letter of congratulation from the khan. One was a relation of this prince, but did not understand a word of Persian, he was the only Ouzbek I saw, who did not speak that language. Two others were slaves of the khan; one an Afghan, the other a Persian, the latter was simply dressed in a cloak made of camel wool, the others in rich dresses of gold and red silk.

About 15 verstes from Bokhara, the chief of the Iassaoul, with about 30 of his men, came to meet the ambassador, and accompanied us to Bazartchi, where we were lodged in a house belonging to the Couch-beghi; the rooms were so damp, we preferred sleeping in our kibitkas, notwithstanding the strong inclination we had to quit them.

After thirty-six hours of discussion, the ceremonial of our reception was arranged; and the khan agreed that Monsieur Négri should be seated in his presence.

On the 20th December, we made our public entry into Bokhara, a detachment of Cossacks marched in front with the presents, which consisted of furs, China, crystals, watches and guns. Another party of Cossacks were in the rear, and the march was brought up by a detachment of infantry. An Ouzbek of rank, who perfectly understood Persian, conducted the ambassador to the palace.

In this order we slowly advanced, and after passing the gate which was very lofty, we continued our route through a narrow winding street, of gloomy houses, built of earth, and flat roofed. At last we arrived at the great square, surrounded with mosques, colleges or madrissa, and the enclosure of the palace.

After dismounting, we entered a vaulted corridore built of brick; but with soldiers on each side, in number about 400, armed with muskets of every different shape and length. We then entered a small court, the passage, in which there were about 10 guns without carriages, and at last arrived in a square court, bounded by walls, round which were seated 300 or 400 people of Bokhara, dressed in white turbans and coats of gold brocade. Turning to the right, we reached the anti-chamber, which joins the hall of audience, where the khan was seated on cushions, covered with red cloth, ornamented with rich gold fringe; on the floor was a common Persian carpet, the walls of white plaster and the ceiling of coloured planks.

This hall was double the length of its breadth; the khan was seated with his back to the wall opposite the door we entered; on his left were his two sons, one about 15 years of age. On his right was the Couch-beghi, on each side of the door were five grandees. Monsieur Négri supported by two chamberlains, advanced to within 12 paces of the khan, whom he addressed in Persian, presented his credentials through the Couch-beghi; the officers of the mission remained standing with their backs to the wall, on each side of the door.

The Couch-beghi immediately presented the emperor's letter to the khan; the prince read it aloud; after which he requested Monsieur Négri to order some of the soldiers to enter the anti-chamber, who left their arms outside; on seeing them, the khan laughed like a child; in the expression of his countenance, there is very little intelligence; he may be about 45 years of age, with a full beard, black eyes, and an olive complexion; appearing much debilitated. He wore a dress of black velvet, ornamented with precious stones; a muslin tur-

ban; on it was an aigrette of heron's feathers, with a gold band crossing obliquely, and much resembled the Kalewi or head dress, of the grand vizier or kizlar-agassi, of Constantinople. The Couch-beghi, and three other principal officers, in place of turbans, wore cylinder caps of fur. The master of ceremonies carried a sort of halbert, with an axe-shaped head of silver. The presents were delivered to the khan in another room; the audience broke up in about 20 minutes, when we all assembled outside the palace. Our escort returned to Bazartchi, and bivouaced in a garden, during the whole remaining part of the winter. Monsieur Négri and the attachés of the mission, were lodged in a large house, within the city of Bokhara, belonging to the Couch-beghi.

We remained in this city from the 20th December 1820, to the 10th March 1821; the weather was very fine, when we proceeded to Bazartchi. The bivouac in the garden appeared preferable to us to the dull houses of the town.

The 22d of March, we left Bazartchi, and on the 25th, quitted the country of Bokhara, well pleased at having seen this country, and still more so at leaving it.

(*To be continued.*)

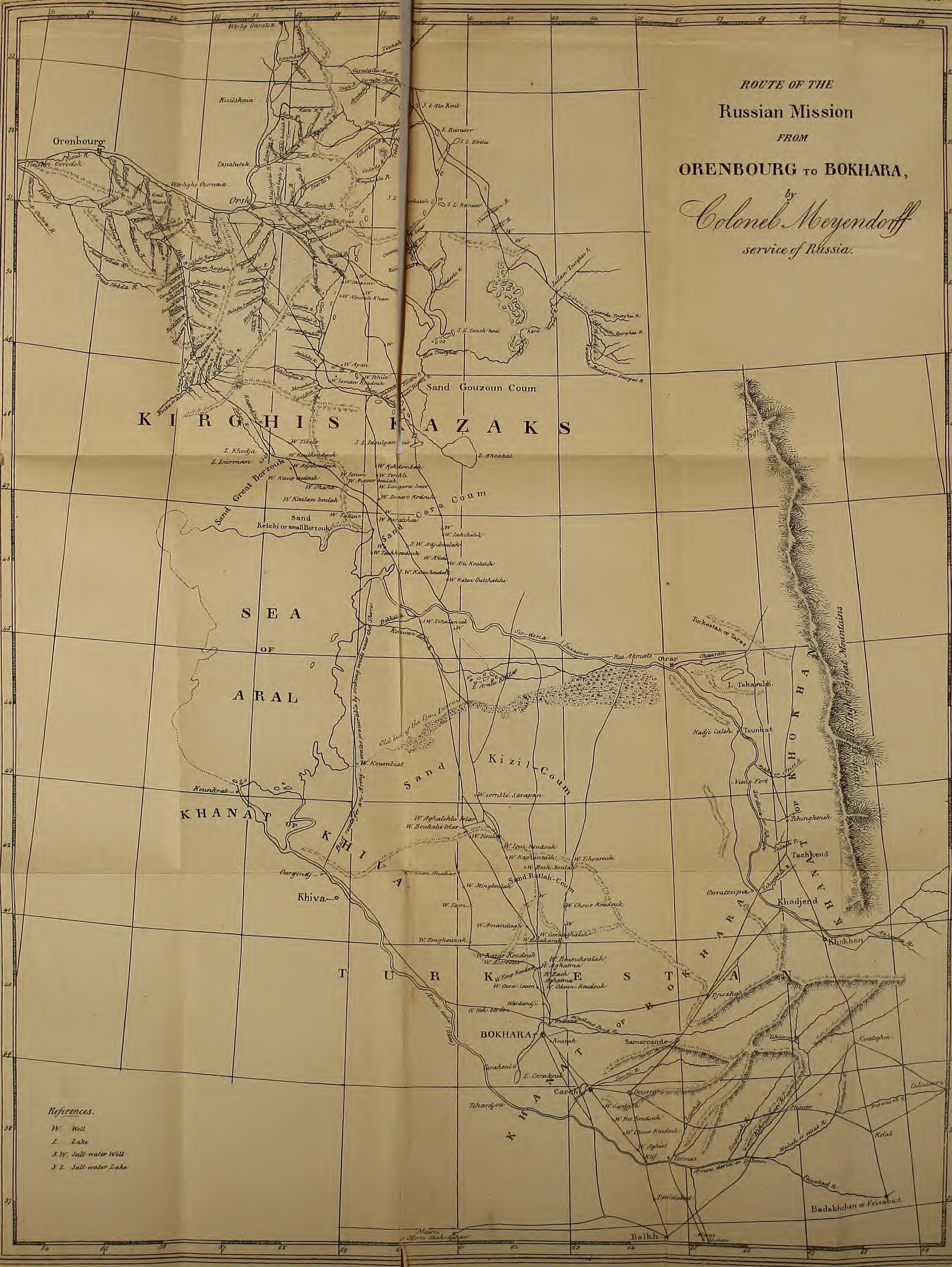
Route from Orenbourg to Bokhara as followed by the Russian Mission in the year 1820.

Date.		Encampments.	What was found at the halting stations.	Distance in Verstes and Toises.	
				Verstes.	Toises.
Oct.	10	Rivulet of Berdianka	Water and grass	20	251
	11				
	12	——— Bitli-sou	A little water	25	469
	13	——— Bourté	Water	33	280
	14	——— Ouzoun-Bourté	Water, grass and bushes	26	120
	15				
	16	——— Cara-boutak	Good water and grass	35	302
	17	River Ilek	Do. do. do.	27	403
	18				
	19	River Ilek	Do. do. do.	31	60
	20	Brook Tamdy-ïaman	Do. do. do.	27	380
	21	——— Souïouk-sou	Brushes, reeds, water-grass	29	470
	22				
	23	Brook Talach-beg	Bushes, water and grass	35	37
	24	Mountain of Bassagha	No water, a few bushes, little grass	31	386
	25	River Koubleïli-temir	Bushes, a little grass, water brackish	29	89
	26				
	27	River of Tiraklu	Good water, a little grass, and a few bushes	31	219
	28	Brook of Cara-akenti	Bad water, little grass, and few bushes	34	110
	29				
	30	Brook Touban	Water, bushes and grass	27	123
	31	——— Kaoundjour	Do. do. do.	22	101
Nov.	1	——— Kaoundjour	Do. do. do.	29	260
	2	Lake of Khodja	Water, reeds, grass	44	450
	3				

Route from Orenbourg to Bokhara as followed by the Russian Mission in the year 1820.

DATE.	ENCAMPMENTS.	WHAT WAS FOUND AT THE HALTING STATIONS.	DISTANCE IN VERSTES AND TOISES.	
			Verstes.	Toises.
4	Wells of Coul-koudouk	Water, reeds, grass, a few bushes	29	520
5				
6	Adji-koudouk	Water, reeds, grass, a few bushes.	24	383
7	Tchouber-tepeh	Brackish water do. do.	29	35
8	Source Ok-tani	Bad water, bushes and grass	26	432
9	——— Sari-boulak	Do. do. do.	39	229
10				
11	Mountain of Derman-bachi	Bushes, grass, no water	30	161
12	Wells of Ouratchaï	Bushes, bad grass, bad water	20	407
13	Kulli	Do. do. salt water	30	268
14	Hill of Sapak	Bushes, no water or grass	26	162
15	Bay of Kamechlu	Scattered bushes, good water, a little grass	25	219
16				
17				
18	Ialter-koul	Scattered bushes, fine grass, good water	27	19
19	River Sir	Good water, reeds, grass, bushes	26	12
20				
21				
22	Small lake	Water, bushes and grass	9	378
23	Plain	Bushes, no water or grass	24	79
24	River Kouvan	Scattered bushes, number of trees, good water	29	329
25	River Kouvan	Do. do. do. do.	19	304
26	River Kouvan			

NOTE.—104 verstes are equal to a degree or 69½ English miles.


ROUTE OF THE
Russian Mission
FROM
ORENBOURG TO BOKHARA,
by
Colonel Meyendorff
service of Russia.
Orenbourg
Orsk
KIRGHIS KAZAKS
Sand Gouzoun Coum
Sand Great Borzouk
Sand Ketchi or small Borzouk
Sand Cara Coum
SEA OF ARAL
Sir-deria
Otrar
L. Tchawaldi
Tounkat
Sand Kizil-Coum
Sand Batlak-Coum
KHANAT OF KHIVA
Khiva
Ourgendj
Kounkrat
Tachkend
Khodjend
Khokhan
KHANAT OF KHOKHAN
TURKESTAN
KHANAT OF BOKHARA
BOKHARA
Samarcande
Djisakh
Carchi
L. Carakoul
Balkh
Badakhchan or Feizabad
References.
W. Well
L. Lake
S.W. Salt-water Well
S.L. Salt-water Lake

BRITISH MUSEUM
NATURAL HISTORY

VII.—*Report on the manufacture of Tea, and on the extent and produce of the Tea Plantations in Assam.—By* C. A. Bruce, *Superintendent of Tea Culture.*

(Presented by the Tea Committee, August 16th, 1839.)

I submit this report on our Assam Tea with much diffidence, on account of the troubles in which this frontier has been unfortunately involved. I have had something more than Tea to occupy my mind, and have consequently not been able to commit all my thoughts to paper at one time; this I hope will account for the rambling manner in which I have treated the subject. Such as my report is, I trust it will be found acceptable, as throwing some new light on a subject of no little importance to British India, and the British public generally. In drawing out this report, it gives me much pleasure to say, that our information and knowledge respecting Tea and Tea tracts are far more extensive than when I last wrote on this subject;—the number of tracts now known amounting to 120, some of them very extensive, both on the hills and in the plains. A sufficiency of seeds and seedlings might be collected from these tracts in the course of a few years to plant off the whole of Assam; and I feel convinced, from my different journeys over the country, that but a very small portion of the localities are as yet known.

Last year in going over one of the hills behind *Jaipore*, about 300 feet high, I came upon a Tea tract, which must have been two or three miles in length, in fact I did not see the end of it; the trees were in most parts as thick as they could grow, and the Tea seeds (smaller than what I had seen before) fine and fresh, literally covered the ground; this was in the middle of November, and the trees had abundance of fruit and flower on them. One of the largest trees I found to be two cubits in circumference, and full forty cubits in height. At the foot of the hill I found another tract, and had time permitted me to explore those parts, there is no doubt but I should have found many of the Naga hills covered with Tea. I have since been informed of two more tracts near this. In going along the foot of the hills to the westward, I was informed that there was Tea at *Teweack*, or near it: this information came too late, for I had passed it just a little to the east of the Dacca river, at a place called *Cheriedoo*, a small hill projecting out more than the rest on the plain to the northward, with the ruins of a brick temple on it; here I found Tea, and no doubt if there had been time to exa-

mine, I should have found many more tracts. I crossed the Dacca river at the old fort of *Ghergong*, and walked towards the hills, and almost immediately came upon Tea. The place is called *Hauthoweah.* Here I remained a couple of days, going about the country, and came upon no fewer than thirteen tracts. A Dewaniah who assisted me to hunt out these tracts, and who was well acquainted with the leaf, as he had been in the habit of drinking tea during his residence with the Singphoes, informed me that he had seen a large tract of Tea plants on the Naga mountains, a day's journey west of *Chiridoo.* I have no reason to doubt the veracity of this man; he offered to point out the place to me, or any of my men, if they would accompany him; but as the country belonged to Raja Poorunda Sing, I could not examine it. I feel convinced the whole of the country is full of Tea.

Again, in going further to the south-west, just before I came to *Gabrew* hill, I found the small hills adjoining it, to the eastward, covered with Tea-plants. The flowers of the Tea on these hills are of a pleasant delicate fragrance, unlike the smell of our other Tea-plants; but the leaves and fruit appear the same. This would be a delightful place for the manufacture of Tea, as the country is well populated, has abundance of grain, and labour is cheap. There is a small stream called the *Jhangy* river, at a distance of two hours walk; it is navigable, I am informed, all the year round for small canoes, which could carry down the Tea; and the place is only one and a half day's journey from *Jorehaut*, the capital of Upper Assam. South-west of *Gabrew Purbut* (about two days journey) there is a village at the foot of the hill, inhabited by a race called Norahs; they are Shans, I believe, as they came from the eastward, where Tea abounds. I had long conversations with them, and the oldest man of the village, who was also the head of it, informed me, that when his father was a young man, he had emigrated with many others, and settled at *Tipum*, opposite *Jaipore*, on account of the constant disturbances at *Munkum*; that they brought the Tea-plant with them and planted it on the *Tipum* hill, where it exists to this day; and that when he was about sixteen years of age, he was obliged to leave *Tipum*, on account of the wars and disturbances at that place, and take shelter at the village where he now resides. This man said he was now eighty years of age, and that his father died a very old man. How true this story is, I cannot say, and do not see what good it would do the old man to fabricate it. This was the only man I met with in my journeys about the country who could give any account of the Tea-plant, with the exception of an Ahum, who declared to me that it was Sooka, or the first Kacharry Rajah of Assam, who brought the Tea-plant from *Munkum;*

he said it was written in his *Putty*, or history. The *Ahum-Putty* I have never been able to get hold of; but this I know, that the information about the Tea-plant pointed out by the old Norah man, as being on the *Tipum* hill, is true ; for I have cleared the tract where it grew thickest, about 300 yards by 300, running from the foot of the hill to the top. The old man told me his father cut the plant down every third year, that he might get the young leaves.

To the west of *Gabrew* I did not find any Tea ; but to the westward of the *Dhunseeree* river I found a species, though not the same as that we use. If the people on the west side of the *Dhunseeree* river were acquainted with the true leaf, I think Tea would be found. I planted it all along the route I went, which may lead to its eventual discovery ; but people should be sent to search for the plant who are really acquainted with it. I think a vast quantity of Tea would be brought to light if this were done ; our tracts are distributed all over the country. How much Tea they would all produce if fully worked, I will not pretend to say; but in the course of this subject, I will mention such matters relative to the tracts and the plants on them, that every one may make his own calculation. Until lately we had only two Chinese Black-Tea makers. These men have twelve native assistants ; each Chinaman with six assistants can only superintend one locality, and the Tea leaves from the various other tracts, widely separated, must be brought to these two places for manufacture. The consequence is, that an additional number of labourers must always be employed to bring the leaves from so great a distance. The leaves suffer when brought in large quantities from a distance, as they soon begin to ferment, and the labour of only preparing them so far in process that they may not spoil by the morning, is excessive. The men have often to work until very late to accomplish this. When labour falls so very heavy and on so very few, it cannot be expected that it can be equally well executed, as if more had been employed. The leaves last gathered are also much larger than they ought to be, for want of being collected and manufactured earlier ; consequently the Tea is inferior in quality. I mention this, to shew the inconvenience and expense of having so few Tea makers.

The samples of Black-Tea made by the twelve assistants having been approved of by the Tea Committee in Calcutta, it was my intention to have distributed the men amongst the different tracts, but the late disturbances on our frontier have prevented this arrangement ; and I have been obliged to employ ten men in Assam (two others having gone to Calcutta in charge of Tea) at the tract called *Kahung*, which is becoming

a very extensive and important Tea locality—so many others being near it, which can all be thrown into one. When we have a sufficient number of manufacturers, so that we can afford to have some at each tract, or garden, as they have in China, then we may hope to compete with that nation in cheapness of produce; nay, we might, and ought, to undersell them; for if each tract, or garden, had its own Tea maker and labourers, the collecting of the leaves would not perhaps occupy more than twelve days in each crop; after which the men might be discharged, or profitably employed on the Tea grounds. But now, for the want of a sufficient number of labourers and Tea makers, there is a constant gathering of leaves throughout the month; and as I said before, those gathered last can only make inferior Teas; besides the great loss by the leaves getting too old, and hereby unfit for being made into any Tea; and all this entirely for want of hands to pluck the leaves. It is true we have gained twelve Black-Tea makers this year, in addition to the last; and twelve more native assistants have been appointed, who may be available next year to manufacture Tea independently, as they were learning the art all last year. We have also had an addition to our establishment of two Chinese Green Tea manufacturers, and twelve native assistants have been placed under them as learners; but what are these compared to the vast quantity of Tea, or the ground the Tea plants cover, or might be made to cover in three years, but a drop of water in the ocean? We must go on at a much faster pace in the two great essentials—Tea manufacturers, and labourers,—in order to have them available at each garden, when the leaves come into season.

If I were asked, when will this Tea experiment be in a sufficient state of forwardness, so as to be transferable to speculators? I would answer, when a sufficient number of native Tea manufacturers have been taught to prepare both the Black and the Green sort; and that under one hundred available Tea manufacturers, it would not be worth while for private speculators to take up the scheme on a large scale; on a small one it would be a different thing. In the course of two or three years we ought to have that number. Labourers must be introduced, in the first instance, to give a tone to the Assam Opium-eaters; but the great fear is, that these latter would corrupt the new comers. If the cultivation of Tea were encouraged, and the Poppy put a stop to in Assam, the Assamese would make a splendid set of Tea manufacturers and Tea cultivators.

In giving a statement of the number of Tea tracts, when I say that *Tingri*, or any other tract is so long and so broad, it must be understood, that space to that extent only has been cleared, being found to contain

all the plants which grew thickly together; as it was not thought worth while at the commencement of these experiments to go to the expense of clearing any more of the forest for the sake of a few straggling plants. If these straggling plants were followed up, they would in all probability be found gradually becoming more numerous, until you found yourself in another tract as thick and as numerous as the one you left; and if the straggling plants of this new tract were traced, they would by degrees disappear until not one was to be seen. But if you only proceeded on through the jungles, it is ten to one that you would come upon a solitary Tea plant, a little further on you would meet with another; until you gradually found yourself in another new tract, as full of plants as the one you had left, growing absolutely so thick as to impede each others growth. Thus I am convinced one might go on for miles from one tract into another. All my Tea tracts about *Tingri* and *Kahung* are formed in this manner, with only a patch of jungle between them, which is not greater than what could be conveniently filled up by thinning those parts that have too many plants. At *Kahung* I have lately knocked three tracts into one, and I shall most probably have to continue doing the same until one tract shall be made of what now consists of a dozen. I have never seen the end of *Juggundoo's* Tea tract, nor yet *Kujudoo's* or *Ningrew's*. I feel confident that the two former run over the hills and join, or nearly join, some of our tracts in the *Muttuck* country. Nor have I seen the end of *Kahung* tract, all about that part of the country being one vast succession of Tea from *Runjagurra* on the *Debrew*, to *Jaipore* on the *Buri Dehing*. The Tea localities are thickly scattered—those that are known; and they are but a small portion compared to those that are unknown. There is the *Namsong* tract on the *Naga* hills, the largest that has yet been seen, and the extent of which is not ascertained. The tracts on the *Gubind* hills are unknown; and this is likewise the case with *Haut Holah* and *Cheridoo;* so that there is a large field for improvement throughout, to say nothing of the *Singho* tracts, which may be found to be one unbounded link to *Hookum*; and who knows but it crosses the Irrawaddy to China? Many Tea tracts I know have been cut down in ignorance by the natives, to make room for the rice field, for firewood, and fences, but many of these tracts have sprung up again, more vigorous than before. Witness that at *Ningrew*, where the natives say that every thing was cut down, and the land planted with rice, except on the high ground.

With respect to the Tea plant being most productive on high or low

ground, I cannot well say, as all our tracts are on the plains; but from what little I have seen of the hill tracts, I should suppose they were not more productive. In China the hill tracts produce the *best* Teas, and they may do the same here. Almost all my tracts on the plains are nearly on the same level, I should think. *Nudwa* perhaps is a little higher than *Tingri*, and *Tingri* a little higher than *Kahung*, but I believe they are equally productive; although if I leaned towards any side, with my limited experience, I should say that the low land, such as at *Kahung*, which is not so low as ever to be inundated by the strongest rise in the river, is the best. The plants seem to love and court moisture, not from stagnant pools, but running streams. The *Kahung* tracts have the water in and around them; they are all in heavy tree-jungles, which makes it very expensive to clear them. An extent of 300 by 300 will cost from 200 to 300 rupees; i. e. according to the manner in which the miserable Opium-smoking Assamese work. This alone ought to point out the utility of introducing a superior race of labourers, who would not only work themselves, but encourage their women and children to do the same;—in plucking and sorting leaves they might be profitably turned to account for both parties. This I have not been able to instil into the heads of the Assamese, who will not permit their women to come into the Tea gardens. Indeed unless more labourers can be furnished, a larger amount of tea must not be looked for at present. Last season it was with the greatest difficulty that I could get a sufficient number of hands to gather the leaves. The plucking of the leaves may appear to many a very easy and light employment, but there are not a few of our coolies who would much rather be employed on any other job; the standing in one position so many hours occasions swellings in the legs, as our plants are not like those of China, only three feet high, but double that size, so that one must stand upright to gather the leaves. The Chinese pluck theirs squatting down. We lie under a great disadvantage in not having regular men to pluck the leaves; those that have been taught to do so, can pluck twice as many as those that have not, and we can seldom get hold of the same men two seasons running. I am of opinion that our trees will become of a smaller and more convenient size after a few years cultivation; because, trimming of the plants, and taking all the young leaves almost as soon as they appear, month after month and year after year, and the plants being deprived of the rich soil they had been living on from time unknown, must soon tell upon them. Transplanting also helps to stunt and shorten the growth of these plants. The Chinese declared to me, that the China plants now at *Deenjoy* would

never have attained to half the perfection they now have, under ten years in their own country.

I may here observe, that the sun has a material effect on the leaves; for as soon as the trees that shade the plants are removed, the leaf, from a fine deep green, begins to turn into a yellowish colour, which it retains for some months, and then again gradually changes to a healthy green, but now becomes thicker, and the plant throws out far more numerous leaves than when in the shade. The more the leaves are plucked, the greater number of them are produced; if the leaves of the first crop were not gathered, you might look in vain for the leaves of the second crop. The Tea made from the leaves in the shade is not near so good as that from leaves exposed to the sun; the leaves of plants in the sun are much earlier in season than of those in the shade; the leaves from the shady tract give out a more watery liquid when rolled, and those from the sunny a more glutinous substance. When the leaves of either are rolled on a sunny day, they emit less of this liquid than on a rainy day. This juice decreases as the season advances. The plants in the sun have flowers and fruit much earlier than those in the shade, and are far more numerous; they have flowers and seeds in July, and fruit in November. Numerous plants are to be seen that by some accident, either cold or rain, have lost all their flowers, and commence throwing out fresh flower-buds more abundantly than ever. Thus it is not unfrequent to see some plants in flower so late as March (some of the China plants were in flower in April) bearing at once the old and the new seeds, flower-buds, and full-blown flowers—all at one and the same time. The rain also greatly affects the leaves; for some sorts of Tea cannot be made on a rainy day; for instance the *Pouchong* and *Mingehew*. The leaves for these ought to be collected about 10 A. M. on a sunny morning, when the dew has evaporated. The *Pouchong* can only be manufactured from the leaves of the first crop; but the *Mingehew*, although it requires the same care in making as the other, can yet be made from any crop, provided it is made on a sunny morning. The Chinese dislike gathering leaves on a rainy day for any description of Tea, and never will do so, unless necessity requires it. Some pretend to distinguish the Teas made on a rainy and on a sunny day, much in the same manner as they can distinguish the shady from the sunny Teas—by their inferiority. If the large leaves for the Black-Tea were collected on a rainy day, about seven seers, or fourteen pounds, of green leaves would be required to make one seer, or two pounds, of Tea; but if collected on a sunny day, about four seers, or eight pounds, of green leaves, would make one seer, or two pounds, of Tea;—so the Chinamen say. I tried the experiment, and found it to

be correct. Our season for Tea making generally commences about the middle of March; the second crop in the middle of May; the third crop about the first of July; but the time varies according to the rains setting in sooner or later. As the manufacture of the *Sychee* and the *Mingchew* Black-Teas has never been described, I will here attempt to give some idea how it is performed.

Sychee Black-Tea. The leaves of this are the *Souchong* and *Pouchong*. After they have been gathered and dried in the sun in the usual way (see my former account of Black-Tea) they are beaten and put away four different times; they are then put into baskets, pressed down, and a cloth put over them. When the leaves become of a brownish colour by the heat, they throw out and have a peculiar smell, and are then ready for the pan, the bottom of which is made red hot. This pan is fixed in masonry breast high, and in a sloping position, forming an angle of forty degrees. Thus the pan being placed on an inclined plane, the leaves, when tossed about in it cannot escape behind, or on the sides, as it is built high up, but fall out near the edge close to the manufacturer, and always into his hands, so as to be swept out easily. When the bottom of this pan has been made red hot by a wood fire, the operator puts a cloth to his mouth to prevent inhaling any of the hot vapour. A man on the left of him stands ready with a basket of prepared leaves; one or two men stand on his right with dollahs, or shallow baskets, to receive the leaves from the pan, and another keeps lifting the hot leaves thrown out of the pan into the dollah, that they may quickly cool. At a given signal from the Chinaman, the person with the basket of prepared leaves seizes a handful and dashes it as quick as thought, into the red hot pan. The Chinaman tosses and turns the crackling leaves in the pan for half a minute, then draws them all out by seizing a few leaves in each hand, using them by way of a brush, not one being left behind. They are all caught by the man with the dollah or basket, who with his disengaged hand continues lifting the leaves, and letting them fall again, that they may quickly cool. Should a leaf be left behind in the pan by any accident, the cloth that is held ready in the mouth is applied to brush it out; but all this is done as quick as lightning. The man that holds the basket of leaves watches the process sharply; for no sooner is the last leaf out of the pan, then he dashes in another handful, so that to an observer at a little distance, it appears as if one man was dashing the leaves in, and the other as fast dashing them out again—so quickly and dexterously is this managed. As soon as one basket has received about four handsful of the hot leaves

from the pan, it is removed, and another basket placed to receive the leaves; and so on, until all is finished. A roaring wood fire is kept up under the pan to keep the bottom red hot, as the succession of fresh leaves tends greatly to cool the pan, which ought always to be scrubbed and washed out after the process is over. In China these pans are made of cast iron, and if great care is not taken they will crack in the cooling; to prevent which, one man keeps tapping the inside of the edge of the pan briskly with a wet broom, used in the cleaning of the vessel, while another pours cold water in gently; thus it cools in a few seconds, and is ready for another batch of Tea. The leaves are rolled and tatched the same as the other Teas, and put into the drying basket for about ten minutes. When a little dry, people are employed to work and press the leaves in the hands in small quantities, of about one and a half to two rupees weight at a time, for about half a minute; they are then put into small square pieces of paper and rolled up; after this they are put into the drying basket, and permitted to dry slowly over a gentle fire for some hours, until the whole is thoroughly dry. This Tea is not sold in the China market, it is used principally as offerings to the priests, or kept for high days and holidays. It is said to be a very fine Tea, and there is not one man in a hundred who can make it properly. The *Pouchong* tea is made in the same way as the *Sychee*, with this exception, that it is not formed into balls.

Mingehew Black-Tea. The leaves (*Pouchong*) are plucked and dried in the sun, and are then beaten and dried in the shade for half an hour; this is done three successive times, and the leaves are very much shaken by a circular motion given to them in a sieve, so as to keep them rolling and tumbling about in the centre of it. This treatment continues until they are very soft; they are then allowed to remain for a short time; the contents of the first sieve are then placed in the centre of a close worked bamboo basket with a narrow edge, and the leaves are divided into four equal parts. The contents of the second sieve are placed in another bamboo basket like the former, and this basket is placed on the top of the first, and so on, piling one basket upon another until all is finished;—there may be about two pounds of leaves in each basket. The red hot pan is used the same as in *Sychee*, only now the men cast in one division of the leaves into the basket, and this is tumbled and tossed about in the red hot pan, like a plaything, for about thirty seconds, and then swept out; another division is cast in, and so on, until all the prepared baskets have been emptied. The contents of each basket are still kept separate, by placing the leaves when they come out of the pan in separate baskets. The whole is a brisk and a lively scene,

and quite methodical, every one knowing his station, and the part he has to perform. The baskets are then arranged on shelves to air; the contents are afterwards tatched the same as our Black-Teas, and fired in the drying baskets, but with this difference, that each division is placed on paper and dried. When it is half dry (the same as our Teas) it is put away for the night, and the next morning it is picked, and put into the drying baskets over gentle deadened fires, and gradually dried there; it is then packed hot. This Tea is a difficult sort to make.

Shung-Paho Black-Tea. Pluck the young *(Paho)* leaf that has not yet blown or expanded, and has the down on it; and the next one that has blown with a part of the stalk; put it into the sun for half an hour, then into the shade; tatch over a gentle fire, and in tatching roll the leaves occasionally in the pan, and spread them all round the sides of the same; again roll them until they begin to have a withered and soft appearance; then spread them on large sieves, and put them in the shade to air for the night; next morning pick, and then fire them well. Some Tea makers do not keep them all night, but manufacture and pack the Tea the same day. This Tea is valued in China, as it is very scarce; but the Chinamen acknowledge that it is not a good sort. They prefer the Teas, the leaves of which have come to maturity.

The China Black-Tea plants which were brought into *Muttuck* in 1837, amounted in all to 1609—healthy and sickly. A few of the latter died, but the remainder are healthy, and flourish as well, as if they had been reared in China. The leaves of these plants were plucked in the beginning of March, and weighed sixteen seers or thirty-two pounds. Many of the plants were then in flower, and had small seeds. They are about three feet high, and were loaded with fruit last year, but the greater part of it decayed when it had come to maturity, as was the case with the Assam Tea-seeds, and almost every seed of these wilds, in the past year. The seeds should, I think, be plucked from the plant when thought ripe, and not be permitted to drop or fall to the ground. I collected about twenty-four pounds of the China seeds, and sowed some on the little hill of *Tipum* in my Tea garden, and some in the Nursery-ground at *Jaipore;* above three thousand of which have come up, are looking beautiful, and doing very well. I have since found out that all the China seedlings on *Tipum* hill have been destroyed by some insect.

The Assam and China seedlings are near each other; the latter have a much darker appearance. I have made but few nurseries, or raised plants from seed, as abundance of young plants can be procured, of any age or size, from our Tea tracts. There may be about 6,000

young seedlings at *Chubwa;* at *Deenjoy* about 2,000; at *Tingri* a few; and some at *Paundooah.* In June and July, 1837, 17,000 young plants were brought from *Muttuck,* and planted at a place called *Toongroong Patar,* amongst the thick tree jungles of *Sadiya.*

In March of the same year six or eight thousand were brought from *Muttuck,* and planted in different thick jungles at *Sadiya;* many of these died in consequence of the buffaloes constantly breaking in amongst them; the rest are doing well, but I am afraid will be killed from the above cause; and now that I have removed to *Jaipore,* they are too far off for my personal superintendence.

In 1838, 52,000 young Tea plants were brought from the *Nemsong Naga* hill tracts, about ten miles from *Jaipore;* a great portion of these have been lately sent to Calcutta, to be forwarded to Madras; should they thrive there, it is my opinion that they will never attain any height, at least not like ours, but be dwarfish like the China plants. *Deenjoy, Chubwa, Tingri,* and *Geela-Jhan* tracts have been filled up or enlarged with plants from the jungle tracts. In transplanting from one sunny tract to another, when done in the rains, very few, if any, die; if the plants be removed from a deep shade to a sunny tract, the risk is greater, but still, if there is plenty of rain, few only will die. If from a deep shade to a piece of ground not a Tea tract, and exposed to the sun—for instance from the *Naga* hills to *Jaipore*—if there be plenty of rain, and the soil congenial, as it is at this place, few will die; if shaded by a few trees, less will perish; if taken from shade, and planted in shade and the soil uncongenial, but there is plenty of rain, the greater portion will live;—witness *Toongroong Patar* at *Sadiya.* If the plants are brought from deep shade, and planted in the sun in uncongenial soil, let them have ever so much rain, not one in fifty will be alive the third year;—witness 30,000 brought to *Sadiya.* I believe the Tea plant to be so hardy that it would almost live in any soil, provided it were planted in deep shade when taken to it. There should be plenty of water near the roots, but the plant should always be above inundation. As soon as it has taken root, which it will soon do, the shade may be removed, and there will be no fear of the plant dying.

The advantage of getting plants from the jungle tracts is, that you can get them of any age or size; nothing more is necessary than to send a few coolies early in March, just as the rains commence, and have the plants of the size required removed to your own garden; and if they are of a moderate size, you may gather a small crop of Tea from them the next year. As these plants are very slender, it would be best to plant four or five close together to form a fine bush. If the plants are

raised from seed, you may expect a small crop of Tea the third year, but they do not come to maturity under six years. It is said they live to the age of forty or fifty years. The Chinese way of digging a hole, and putting in a handful or two of seed, does not succeed so well in this country, as putting two or three seeds on small ridges of earth and covering them over, which I have found to answer better.

In clearing a new Tea tract, if the jungle trees are very large and numerous, it would be as well to make a clean sweep of the whole, by cutting them and the Tea plants all down together; for it would be impossible to get rid of so much wood without the help of fire. The Tea plants, if allowed to remain, would be of little use after they had been crushed and broken by the fall of the large trees, and dried up by the fire; but admitting that they could escape all this, the leaves of trees from twelve to twenty feet high could not be reached, and if they could, they would be almost useless for Tea manufacture, as it is the young leaves, from young trees, that produce the best Teas. But if all were cut down and set fire to, we should have a fine clear tract at once, at the least expense, and might expect to have a pretty good crop of Tea one year after the cutting, or, at furthest, the second year; for it is astonishing with what vigour the plant shoots up after the fire has been applied. And we gain by this process; for, from every old stock or stump cut down, ten to twelve more vigorous shoots spring up, so that in the place of a single plant you have now a fine Tea bush. I think from what I have seen of these plants, that if cut down every third year, they would yield far superior Teas; neither am I singular in this opinion; the Green-Tea Chinamen having told me that they cut down their plants every ninth year, which may be reckoned equivalent to our third year, taking into consideration the size of our trees and the richness of our soil. Our trees, or plants, are certainly more than four or five times the size of theirs, and must consequently yield so many times more produce; theirs is the dwarf, ours the giant Tea. The size of the leaf matters nothing, in my opinion, provided it is young and tender; even their diminutive leaf, if one day too old, is good for nothing.

As the Green-Tea Chinamen have just commenced operations, I will try to give some account of this most interesting process. All leaves up to the size of the *Souchong* are taken for the Green-Tea. About three pounds of the fresh leaves, immediately they are brought in, are cast into a hot pan (sometimes they are kept over night when abundance have been brought in, and we have not been able to work all up); they are then rolled and tossed about in the pan until they

become too hot for the hand. Two slips of bamboo, each about a foot long, split at one end so as to form six prongs, are now used to tumble and toss the leaves about, by running the sticks down the sides of the pan, and turning the leaves up first with the right hand, then with the left, and this as fast as possible; which keeps the leaves rolling about in the pan without being burnt; this lasts about three minutes; the leaves will then admit of being rolled and pressed without breaking. They are now taken from the pan and rolled in dollahs, much the same as the Black-Tea, for about three minutes, in which process a great quantity of the juice is extracted, if they be fresh leaves; but if they have been kept over night, very little juice can be expressed from them in the morning, on account of its having evaporated. The Chinamen say, this does not matter, as it makes no difference in the Tea. The leaves are then pressed hard between both hands, and turned round and pressed again and again, until they have taken the shape of a small pyramid. They are now placed in bamboo-baskets or dollahs with a narrow edge, and the dollahs on bamboo frame-work (see fig. 2 of my former account of Black-Tea) where they are exposed to the sun for two or three minutes, after which these pyramids of Tea are gently opened and thinly spread on the dollahs to dry. When the Tea has become a little dry, (which will be the case in from five to ten minutes if the sun be hot) it is again rolled, and then placed in the sun as before; this is done three successive times. But should the weather be rainy, and there is no hope of its clearing, all this drying is done over the fire in a small drying basket, the same as with Black-Tea. The Green-Tea makers have as great an aversion to drying their Tea over the fire, as the Black-Tea makers. The third time it has been rolled and dried, there is very little moisture left in the Tea; it is now put into a hot pan, and gently turned over and over, and opened out occasionally, until all has become well heated; it is then tossed out into a basket, and while hot put into a very strong bag, previously prepared for it, about four feet long, and four spans in circumference. Into this bag the Tea is pressed with great force with the hands and feet; from fourteen to twenty pounds being put in at one time, and forced into as small a compass as possible. With his left hand the man firmly closes the mouth of the bag immediately above the leaves, while with the right hand he pommels and beats the bag, every now and then giving it a turn; thus he beats and turns and works at it, tightening it by every turn with one hand, and holding on with the other, until he has squeezed the leaves into as small a compass as possible at the end of the bag. He now makes it fast by turns of the cloth where he held on, so that it may

not open; and then draws the cloth of the bag over the ball of leaves, thus doubling the bag, the mouth of which is twisted and made fast. The man then stands up, holding on by a post or some such thing, and works this ball of leaves under his feet, at the same time alternately pressing with all his weight, first with one foot and then the other, turning the ball over and over, and occasionally opening the bag to tighten it more firmly. When he has made it almost as hard as a stone, he secures the mouth well and puts the bag away for that day. Next morning it is opened out and the leaves gently separated and placed on dollahs, then fired and dried until they are crisp, the same as the Black-Tea, after which they are packed in boxes or baskets. In China the baskets are made of double bamboo, with leaves between. The Tea may then remain on the spot for two or three months, or be sent to any other place to receive the final process. This first part of the Green-Tea process is so simple, that the natives of this country readily pick it up in a month or two.

The second process now commences by opening the boxes or baskets, and exposing the Tea on large shallow bamboo baskets or dollahs (see former account, fig. 1) until it has become soft enough to roll; it is then put into cast iron pans, set in brick fire-places, the same as described in making the *Sychee* Black-Tea. The pan is made very hot by a wood-fire, and seven pounds of the leaves are thrown into it and rubbed against the pan, with the right hand until tired, and then with the left, so as not to make the process fatiguing. The pan being placed on an inclined plane the leaves always come tumbling back towards and near the operator, as he pushes them up from him, moving his hand backwards and forwards and pressing on the leaves with some force with the palms, keeping the ends of the fingers up, to prevent their coming in contact with the hot pan. After one hour's good rubbing the leaves are taken out and thrown into a large coarse bamboo-sieve, from this into a finer one, and again a still finer one, until three sorts of Tea have been separated. The first, or largest sort, is put into the funnel of the winnowing machine, which has three divisions of small traps below, to let the Tea out. A man turns the wheel with his right hand, and with the left regulates the quantity of Tea that shall fall through the wooden funnel above, by a wooden slide at the bottom of it. The Tea being thrown from the sieves into the funnel, the man turns the crank of the wheel, and moves the slide of the funnel gradually, so as to let the Tea fall through gently, and in small quantities. The blast from the fan blows the smaller particles of Tea to the end of the machine, where it is intercepted by a circular moveable board placed

there. The dust and smaller particles are blown against this board, and fall out at an opening at the bottom into a basket placed there to receive it. The next highest Tea is blown nearly to the end of the machine, and falls down through a trough on the side into a basket; this Tea is called *Young Hyson.* The next being a little heavier, is not blown quite so far; it falls through the same trough, which has a division in the middle; this of course is nearer the centre of the machine. A basket is placed beneath to receive the Tea, which is called *Hyson.* The next, which is still heavier, falls very near to the end of the fan, this is called *Gunpowder* Tea; it is in small balls. The heaviest Tea falls still closer to the fan, and is called *Big Gunpowder;* it is twice or three times the size of *Gunpowder* Tea, and composed of several young leaves that adhere firmly together. This sort is afterwards put into a box and cut with a sharp iron instrument, then sifted and put among the *Gunpowder*, which it now resembles. The different sorts of Tea are now put into shallow bamboo baskets, and men, women, and children are employed to pick out the sticks and bad leaves; this is a most tedious process, as the greatest care is taken not to leave the slightest particle of any thing but good Tea. But to assist and quicken this tiresome process beautiful bamboo sieves, very little inferior to our wire ones, and of various sizes, are employed. The different Teas are thrown into sieves of different sizes, from large Gunpowder to Dust Tea; they are shaken and tossed, and thrown from one person to another in quick succession, making the scene very animating; in this way a great portion of the stalks are got rid of. After the Tea has been well sifted and picked, it is again put into the hot pans and rubbed and rolled as before, for about one hour; it is then put into shallow bamboo baskets, and once more examined, to separate the different Teas that may still remain intermixed, and again put into the hot pan. Now a mixture of sulphate of lime and indigo, very finely pulverized and sifted through fine muslin, in the proportion of three of the former to one of the latter, is added; to a pan of Tea containing about seven pounds, about half a tea-spoonful of this mixture is put and rubbed and rolled along with the Tea in the pan for about one hour, as before described. The Tea is then taken hot from the pan and packed firmly in boxes, both hands and feet being used to press it down. The above mixture is not put to the Tea to improve its flavour, but merely to give it a uniform colour and appearance, as without it some of the Tea would be light and some dark. The indigo gives it the colour, and the sulphate of lime fixes it. The Chinese call the former *Youngtin,* the latter *Acco.* Large Gunpowder Tea they call *Tychen;* little Gunpowder *Cheocheu;* Hyson,

Chingcha; Young Hyson, *Uchin;* Skin-Tea, or old leaves in small bits, *Poocha;* the fine dust, or Powder-Tea, *Chamoot.*

The leaves of the Green-Tea are not plucked the same as the Black, although the tree or plant is one and the same, which has been proved beyond a shadow of doubt; for I am now plucking leaves for both Green and Black from the same tract and from the same plants; the difference lies in the manufacture, and nothing else. The Green-Tea gatherers are accommodated with a small basket, each having a strap passed round the neck so as to let the basket hang on the breast. With one hand the man holds the branch, and with the other plucks the leaf, one at a time, taking as high as the *Souchong* leaf; a little bit of the lower end of the leaf is left for the young leaf to shoot up close to it; not a bit of stock must be gathered. This is a very slow and tedious way of gathering. The Black-Tea maker plucks the leaves with great rapidity with both hands, using only the forefinger and thumb, and collects them in the hollow of the hand; when his hand is full he throws the leaves into a basket under the shade of the tree; and so quickly does he ply his hands that the eye of a learner cannot follow them; nor see the proper kind of leaf to be plucked; all that he sees, is the Chinaman's hands going right and left, his hands fast filling, and the leaves disappearing. Our coolies, like the Green-Tea Chinamen, hold the branch with one hand, and deliberately pluck off the leaf required, then the next, and so on, by which process much time is lost, and a greater number of hands are wanted. Not having a regular set of pluckers is a very great drawback to us; for the men whom we teach this year we see nothing of the next; thus every year we have to instruct fresh men. This difficulty will be removed when we get regular people attached to the Tea plantations; or when the natives of these parts become more fixed and settled in their habitations, and do not move off by whole villages from one place to another, as they have of late years been doing; and when the aversion they have throughout Assam to taking service for payment, has been overcome. They seem to hold this as mean and servile; preferring to cultivate a small patch of ground which barely yields a subsistence. I can perceive, however, that there is a gradual change taking place in the minds of the labouring class of people, or coolies; for occasionally some good able-bodied men come forward for employment. The generality of those that have hitherto offered themselves, has been from the very poorest and the most worthless in the country. In the cold season, when the men have nothing to sow or reap, two or three hundred can be collected; but as soon as the rains set in, all but those that have not bonds, or are not

involved in debt, go off to their cultivations, at the very time when our Tea operations commence. As long as things continue in this state, the price of Tea will be high; but if this drawback were removed, there is nothing to prevent our underselling the Chinese, except the experience of a few more years.

But let us return to our Teas, and take a comparative view of the qualities of the Black and Green-Teas, which may nearly be as follows: *Paho* Black-Tea leaf would make Green-Tea, some Gunpowder, and some Young Hyson. *Pouchong*, although classed as a second Black-Tea, on account of the price it fetches in the market, is a third-rate leaf, for it is rather larger than the *Souchong*. Some of it would make Young Hyson, and some Skin-Tea. *Souchong* would make Hyson and Young Hyson. *Toychong* would make Skin-Tea.—I will hear mention the different kinds of Black-Teas, to make the matter more clear to those who take an interest in the subject. *Thowung Paho* (the *Sung fa* is the same leaf as this) is the downy little leaf not expanded, and the one next to it that has just unfolded a little. This Tea when made appears full of small white leaves, which are the little downy leaves just mentioned. *Twazee-Paho* is from the second crop, and nearly the same kind of Tea, only a little older; the leaf next the small downy one (being a little more expanded) and the small leaf below this, are taken, making three in all; this has also numerous white leaves, but not so many as the former. *Souchong* is the next largest leaf; this is well grown, but embraces all the leaves above it. When the upper leaves have grown out of season for *Thowung-Paho*, and *Twazee-Paho* they are all plucked for the *Souchong* from the third and fourth of the upper leaves. From *Souchong* leaves, the *Minchong* and *Sychee* Teas are made in the first crop, and no other. *Pouchong* is the next largest leaf; it is a little older and larger than the *Souchong*. From this leaf the *Sychee* and *Minchong* Teas can be made in the first crop only. The *Pouchong* is never made in the second crop, on account of its not having a good flavour: many of the *Souchong* leaves are mixed up in this Tea. The *Toychong* leaves are those that are rejected from the *Souchong* and *Pouchong*, as being too large and not taking the roll. When the Teas are picked, these leaves are put on one side. The Chinese often put them into a bag, and give them a twist, something in the Green-Tea way, and then mix them up with the *Souchong* to add to the weight. This leaf (*Toychong*) becomes worse in the second and third crops;—it is a cheap Tea and sold to the poor. All the Black-Teas that are damaged have the flower of what the Chinese call *Qui fa*, and another called *Son fa*, mixed up with them. One pound of the flowers is put to each

box of damaged Tea. After the Teas have been well tatched and mixed up with other sorts, these leaves give them a pleasant fragrance. The *Son fa* plant is about two feet high, and kept in flower pots; it is propagated from the roots. The *Qui fa* plant is from three to four feet high; one pound of the flowers is put to a box of Tea. This plant was seen in the Botanical Gardens at Calcutta by our Chinese interpreter. The flowers of this plant are considered finer than those of the *Son fa.* I annex a rough drawing of each of them, as given to me by the interpreter; the dots in the drawings are intended for small flowers.*

The Black-Tea makers appear to me to be very arbitrary in their mode of manufacture; sometimes they will take the leaves of the *Thowung-Paho,* or perhaps *Twazee-Paho*; but if it has been raining, or there is any want of coolies to pluck the leaves quickly, or from any other cause, they will let the leaves grow a few days longer, and turn all into *Souchong;* which it must be remembered, takes all the small leaves above it. If it is the first crop, the *Souchong* and *Pouchong* leaves may all be turned into *Souchong* Tea; but even if it is the second crop, when the *Pouchong* leaves ought not to be gathered, they are nevertheless plucked and mixed up with the *Souchong* leaves Almost all our Black and all the Green Teas have just been made from one garden. When the Green-Tea makers complained that the leaves were beginning to get too large for them—that is, they were fast growing out of *Souchong* and running into *Pouchong*—the Black-Tea makers took up the manufacture, plucked all the leaves, and made excellent *Pouchong;* so that between the two, there is not a leaf lost. When the Black-Tea makers have a garden to themselves they are cruel pluckers, for they almost strip the tree of leaves for the *Souchong,* and are not at all nice in the plucking; the third and even the fourth leaf on a tender twig is nipped off in the twinkling of an eye; they then look about for more young leaves, and away go the *Pouchong,* and *Toychong* too, which is the largest leaf of all. But the Green-Tea men pluck quietly, one by one, down to *Souchong.* The Black-Tea men separate all their Teas into first, second, third, and fourth crop; but the Green-Tea

* These two sketches are not deemed sufficiently instructive to be added here. One of them is entitled *Qui fa* which is the name of the Olea fragrans, or Sweet-scented Olive, the flowers of which are said to be used for perfuming Teas. But it is more like the Aglaia adorata, a very different plant, which is also supposed to be applied in China for a similar purpose. This last, however, is called *Tsjiulang* by the Chinese, according to Rumpf, and *Sam yeip lan* according to Roxburgh. The other sketch, entitled *Lan fa,* seems to be intended for a liliaceous, or at any rate an endogenous plant. I am unable to offer any conjecture about it.—N. W.

manufacturers make no distinction; they prepare all the Tea they can, throughout the season, box or basket it up, and when the season is over, they set off for Canton with their produce; at least all those who do not wish to sell their Tea on the spot. The different merchants go in quest of it there. It now indiscriminately undergoes the second process; that is, the different crops are all mixed up together. No old leaves can be mixed in the Green, as in the Black-Teas; for the long rolling in the pan crushes them, and the fan blows them away, so that only the young leaves are left.

We shall now take a comparative view of the number of men required by the Black and the Green-Tea makers for one pair of pans.

For the Black-Tea makers there will be required,

to tatch, ...	2	men
— roll, ...	4	,,
— attend to the fire, ...	1	,,
— dry, ...	1	,,
— beat and put in the sun, ...	2	,,
Total number of men.	10	

To keep these men fully at work, from twenty-five to thirty coolies will be required to pluck leaves, and they will turn out about two boxes of Tea per day, (weighing one maund, or 80 pounds) if the weather be fine and sunny; but scarcely half that quantity if it be rainy, on account of the coolies not plucking so much on a rainy, as they would on a fair sunny day. As the people of the country become acquainted with the gathering and manufacturing, three boxes, of forty pounds each, may be expected in fine weather, adding perhaps a few men to the number of coolies.

A pair of pans for the Green-Tea makers would require during the first process,

to tatch, ...	2	men
— receive the Tea from the pans, ...	1	,,
— roll, ...	8	,,
— attend to the fire, ...	1	,,
— put the leaves in the sun and turn them, ...	4	,,
Total number of men, ...	16	

Thirty coolies would be required to keep these men in full play, and they would turn out two boxes of twenty-three seers, or forty-six pounds each, per day; in all ninety-two pounds of Tea. If the weather be rainy, of course the produce is much less: as the gatherers then do only

half work. Thus the difference between Black and Green is, that the former requires six manufacturers less; and that when the Black-Tea is finished, boxed, and ready for exportation, the Green has only undergone the first process, and is but half finished; although it is ready for exportation to any appointed place to receive the final and troublesome, as well as most expensive part of the process. Nevertheless the first part of the Green-Tea preparation is easily learnt by the natives of this place in about two or three months. In speaking of the trouble and expense attending the second process of the Green-Tea making, I beg to observe that it appears to me, from what little I have seen of it, that machinery might easily be brought to bear; and as Assam is about to become a great Tea country, it behoves us to look to this. The Tea half made, as above described, I am informed by the Green-Tea Chinamen now with me, is put either into boxes or baskets, with bamboo leaves between; it has to make in this state a long journey by land and water, and then to go one or more months in a boat by sea, before it reaches Canton, where it is laid aside for one or two months more, before it undergoes the second process; making in all about five months from the time it was first prepared. All that is required is to keep it dry. Now if all this be true, which I have no doubt it is, I see no reason why we could not send it to England, and have it made up there. I rather see every thing in favour of such a plan, and nothing against it. After a year's instruction under Chinamen, it might be left to the ingenuity of Englishmen to roll, sift, and clean the Tea by machinery, and, in fact, reduce the price of the Green-Tea nearly one-half, and thus enable the poor to drink good unadulterated Green-Tea, by throwing the indigo and sulphate of lime overboard. At all events the experiment is worthy of a fair trial, and the first step towards it would be to manufacture the Tea at Calcutta; or perhaps it would be better to let the China Green-Tea makers go direct to England along with it, and have it manufactured there at once.

Now for a word about the Lead-canister maker, who is a very important man in our establishment; for without him, we could not pack our Teas.—On two tiles about an inch thick and sixteen inches square, is pasted, on one side, a sheet of very fine thick paper, said to have been made in Cochin-China, over this another sheet is pasted only at the edges. The paper must be very smooth, and without any kind of hole, knob, or blemish. To make it answer the purpose better, fine chalk is rubbed over it. The tiles thus prepared are laid one over the other and moved backwards and forwards, to ascertain if they work smoothly.

The lower tile rests on two pieces of wood, about four inches in thickness, and the exact length of the tile. The room where the sheets of lead are made must be very smooth and level, as the tiles are apt to break when there is any unequal pressure on them. In the corner of the room there is a sunken brick fire-place, the upper part of which rises just a little above the floor; into this fire-place is inserted one of the cast iron pans used for making Tea, and in one corner of the masonry is a vent hole on which in general a Tea-kettle stands. The pan is heated by a wood fire; an iron ladle with a handle, about six or eight inches long, answers the purpose of taking the lead out of the pan when required. The pan may hold about twenty pounds. There is also another ladle with a long handle, and holes at the bottom, to take the dross off. When lead for the sides of the boxes is required, the proportion of one mound of lead to five seers of tin is put into the pan. When well melted and freed from dross, the two tiles above mentioned are placed on the two pieces of wood, one piece being nearly under the centre, and the other at the edge of the lower tile; the upper tile is placed on the lower tile even and square, projecting perhaps a little backward towards the operator. The tiles being thus placed near the melted lead, the Chinaman squats down on them, placing his heels near the edge, with his toes towards the centre; while with his left hand he lays hold of the corner tile, and with the right holds the short ladle, which he dips into the boiler, and takes out about half a ladleful of the molten metal, tipping up the upper tile with the left hand about three inches, at the same time assisting this operation by pressing on his heels and gently lifting his toes. The upper tile being thus raised he dashes in the contents of the ladle between both, lets go with the left hand, and presses on with his toes, which brings the upper tile with some force to its former position over the lower one, and occasions the superfluous lead to gush out right and left and in front. The upper tile is then raised like the lid of a box, while the lower one rests on the piece of projecting wood underneath, and a fine thin sheet of lead, nearly the size of the tiles, is taken out, and thrown on one side; the upper tile is then gently lowered down, another ladle of hot lead dashed in, and so on in quick succession, about four sheets of lead being made in one minute. The lower tile projecting a little beyond the upper one assists the man to lay the ladle on, and pour in the metal firmly and quickly. To vary the operation, the man sometimes stands up and places one foot on the upper tile, working with his heel and toes, the same as if both feet were on, and just as quickly. Many interruptions take place, such

as examining the papers on the tiles, rubbing them with chalk, turning them round, and reversing them. Sometimes half a split bamboo is placed in front and under the tiles, with a piece of paper on it, to receive the lead that falls down, so that it may not come in contact with the ground. This lead is every now and then taken up and put back into the boiler. A maund of lead may make about twelve or thirteen boxes, which will hold forty pounds. There are also two other tiles, about a cubit square; these are used for making the tops of the canisters, which are generally of tin only, but can also be made from the above mixture. It is necessary in making this sheet-lead, to hold the sheets up and examine them; for if not properly prepared, there are sometimes a number of very fine holes in them, which are not perceptible when lying on the ground or table. On this account the first twenty sheets of lead are thrown aside and rejected, even without any examination. When the tiles have become nice and warm, it is then the fine and even sheets, without holes, are obtained. Before a sheet-lead canister can be made, it is necessary to have a model box made to fit into the wooden box, that is to hold the sheet-lead canister; on this box or shell the sheet-lead canister is made. It has a hole at the bottom to prevent any suction in putting it in, or drawing it out of the box or canister; and instead of a top it has a bar of wood across, by which it is drawn out. For soldering, tin, with the eighth or twelfth part of quicksilver, and some rosin are used. The wood part of some of the boxes is covered with paper pasted on and dried in the sun. To give the paper on the boxes a yellow colour, a mixture of paste with pulverized and sifted saffron is laid on and dried. The paper on the corners of the boxes is ornamented by means of a wooden block with flowers carved on it; on this bit of wood very thin paper, cut to its size, is placed, and a mixture, consisting of pulverized saffron, indigo, and water, having a deep green colour, is laid singly on each bit of paper with a brush made of coco-anut fibres. These slips of paper are put one above the other, twenty thick, or as long as the paper takes the impression of the carved wood below. When the corners of the boxes have been ornamented with this paper and dried, another mixture, about the proportion of four seers of oil to three seers of rosin, boiled together, is applied with a coco-anut brush over all the boxes as a finish; after these are dry they are ready for the Tea.

The following table will shew the size and produce of the Tea tracts now worked, and the probable amount of Tea for this and the next season.

Names of Tea tracts fully worked in 1838.	Length and breadth of Tea tracts.	Number of plants in each Tea tract.	Average produce of single Tea plants.	Produce in 1838.	Remarks.
No. 1 Tringri,	267 by 90	5,000	4 Sa. Weight,	260 Seers	
No. 2 Tringri,	155 by 70	2,340	3-12 Sa. Weight,	160 ,,	
No. 1 Kahung,	480 by 210	1,36,000	4 Sa. Weight,	680 ,,	
No. 1 Chubwa.	200 by 160	8,200	4 Sa. Weight,	410 ,,	
Deenjoy,.......	223 by 171	8,400	2 Sa. Weight,	210 ,,	The plants are small in this tract including China plants.
				1,720	
From Shady Tracts,	..	..	..	390	
				2,110	
The probable increase of the above Tracts for 1839.			......	527	
Probable produce of 1839......................				2,637 Seers	5,274 lbs.

Names of the tracts to be worked in 1840.	Length and breadth of Tea tracts.	Number of plants in each Tea tract.	Probable produce of one Tea plant.	Probable produce in 1840	Remarks.
No. 2 Kahung,	192 by 114	4,720	3 Sa. Weight,	177	
No. 3 Do.	215 by 70	3,440	3 Sa. Weight,	129	
No. 2 Chubwa,	160 by 70	2,420	3 Sa. Weight,	90	
Nowholea,	476 by 160	16,480	3 Sa. Weight,	618	
Tipun,	344 by 331	24,620	3 Sa. Weight,	922	The plants in these tracts now small will not yield a good crop for two years.
Jugundoo,	400 by 200	17,300	3 Sa. Weight,	648	
Ningrew,	300 by 189	12,260	3 Sa. Weight,	459	
The Probable produce of the above 7 tracts..............				2,943	
Add the probable produce of the other 5 tracts...........				2,637	
Probable produce of all the tracts in 1840.................				5,580	11,160 lbs.

It should be borne in mind that this is a rough calculation, and I can only give the probable amount. Most of these plants are very young, or have been recently cut down; a few years hence the plants may yield twice the above quantity. The first table exhibits the absolute produce of 1838. Now let us suppose a new settler were to take land in these parts; what would be his expenses if he were only to cultivate Tea, and had to clear forest land (in the vicinity of the Tea) ten times the size of *Nowholeah*, which is, say 400 by 200 yards, and which would cost him 200 Rupees to clear. Ten such tracts would cover 8,00,000 square yards. Now, to cover this surface of ground with Tea plants, and the plants six feet apart each way, 3,55,555 plants would be required; but if two plants were to be placed together, as I would recommend, then 7,11,110 plants

would be required. The cost would probably be at the rate of five annas for 300 plants; thus:

The clearing of 10 tracts, each 400 by 200 yards,....	2,000	0	0
7,11,110 Tea plants, at 5 annas for 300, ...	740	11	8
Planting the above,............	474	0	0
Weeding each tract 3 times each year, at 30 Rs. each tract,	900	0	0
5 Tea houses, at 50 Rs. each,.........	250	0	0
200 Hoes at 1 Rupee each,............................	200	0	0
100 Axes at 1 Rupee each, ...	100	0	0
100 Daws at 1 Rupee each,............	100	0	0
Dollahs, Challonis, &c., bamboo apparatus,..............	200	0	0
8 Saws at 5 Rupees each,.....	40	0	0
Charcoal and firewood for baking the Tea,................	200	0	0
40 Cast-iron pans, at 4 Rs. each,..........................	160	0	0
Paper for Tea boxes,....................................	100	0	0
Chalk and Indigo,........	50	0	0
3 Maunds of Nails of sizes, at 10 Rs. per maund,.........	30	0	0
2 Elephants at 150 Rs. each,.............	300	0	0
2 Elephant mahoots at 6 Rs. each per month, ...	144	0	0
2 Elephant mates at 4 Rs. each per month,................	96	0	0
Rice for 2 Elephants,....................................	96	0	0
Lead for 888 boxes, at 3 seers per box containing 20 seers, at 8 Rs. per maund,...........	532	12	9
A Cooly sirdar at 10 Rs. per month,.........................	120	0	0
10 Duffadars, or Overseers of coolies at 3 Rs. per month,...	360	0	0
Coolies to collect leaves, 30 to each tract, 20 days to each crop; for 3 crops, or 60 days, at 3 Rs. for each man per month,..	1,800	0	0
4 Native carpenters, at 12 Rs. ditto,....................	576	0	0
8 Sawyers, at 4 Rs. ditto, ...	384	0	0
2 Native Lead-canister makers, at 12 Rs. ditto,...........	288	0	0
Coolies to bring in timber for Sawyers..................	150	0	0
5 Chinamen at 30 Rs. each per month,....................	1,800	0	0
120 Native Tea makers at 5 Rs. each, for 5 months, or one season,............	3,000	0	0
Freight to Calcutta,..	400	0	0
Ditto to England,..................................	1,000	0	0
Total outlay for 10 tracts, Co's. Rs...	16,591	8	5

Deduct charges that are not annual, viz.—

Clearing of tracts,............................	2,000	0	0			
Purchase of Tea plants,....................	740	0	0			
Planting ditto,................................	474	0	0			
Building Tea houses,......................	150	0	0			
Purchase of Hoes,........................	200	0	0			
Do. Axes,..................................	100	0	0			
Do. Daws,................................	100	0	0			
Do. Saws,................................	40	0	0			
Do. Bamboo apparatus,..................	200	0	0			
Do. Elephants,............................	300	0	0	4,304	0	0
Total annual outlay on 10 tracts,				12,287	8	5
Average produce of 3,55,555 tea plants at 4 Sa. Wt. each plant, is 444 Mds. or 17,777 Srs. or 35,554 lbs. at 2*s*., or 1 rupee, per pound would be,....................................				35,554	0	0
Annual profit on 10 tracts, Co's. Rs.				23,266	7	7

Annual outlay	Co's. Rs.	*Annual profits*	Co's. Rs.
For 10 tracts,..............	12,287	On 10 tracts,.........	23,266
For 100 tracts,.........	1,22,870	On 100 tracts,..........	2,32,660
For 1000 tracts,.........	12,28,700	On 1000 tracts,..........	23,26,600

N. B.—The deduction of 4304 Rs. not being annual outlay is not included in this calculation above 10 Tracts.

	Tea tract.	Duffadars.	Takelah.	Coolies.
Required for	1	1	10	30
„ for	10	10	100	300
„ for	100	100	1000	3000

It must be remembered that this calculation has been made on 3,55,555 plants, not on double that number as I proposed, viz. to plant them in pairs, which would certainly, on the lowest calculation, increase the profits thirty per cent. It should be borne in mind also, that 4 sicca weight is not the full produce of each plant; when full grown it will yield double that, or 8 sicca weight, and some even as high as 10 to 12 sicca weight. I have calculated at the rate of 4 sicca, which was absolutely produced in 1838. The plant will, I should think, produce 25 per cent more this year, and go on increasing to what I have above mentioned. But then, on the other hand, the items which I have set down, are not all that will be required to carry on this trade on an extensive scale. The superintendence, numerous additional artizans that will be required, and a thousand little wants which cannot be set down now, but which must

necessarily arise from the nature of the cultivation and manufacture, will go far to diminish the profits, and swell the outlay; but this of course will last but a few years, until the natives of the country have been taught to compete with Chinamen. It should also be remembered, that the calculation I have made on ten tracts is on a supposition that we have a sufficient number of native Tea-makers and Canister-makers, which will not be the case for two or three years to come. It is on this point alone that we are deficient, for the Tea plants and lands are before us. Yes, there is another very great drawback to the cultivation of Tea in this country, and which I believe I before noticed, namely the want of population and labourers. They will have to be imported and settled on the soil, which will be a heavy tax on the first outlay; but this, too, will rectify itself in a few years; for, after the importation of some thousands, others will come of themselves, and the redundant population of Bengal, will pour into Assam, as soon as the people know that they will get a certain rate of pay, as well as lands, for the support of their families. If this should be the case, the Assamese language will in a few years be extinct.

I might here observe, that the British Government would confer a lasting blessing on the Assamese and the new settlers, if immediate and active measures were taken to put down the cultivation of Opium in Assam, and afterwards to stop its importation, by levying high duties on Opium land. If something of this kind is not done, and done quickly too, the thousands that are about to emigrate from the plains into Assam, will soon be infected with the Opium-mania,—that dreadful *plague*, which has depopulated this beautiful country, turned it into a land of wild beasts, with which it is overrun, and has degenerated the Assamese, from a fine race of people, to the most abject, servile, crafty, and demoralized race in India. This vile drug has kept, and does now keep, down the population; the women have fewer children compared with those of other countries, and the children seldom live to become old men, but in general die at manhood; very few old men being seen in this unfortunate country, in comparison with others. Few but those who have resided long in this unhappy-land know the dreadful and immoral effects, which the use of Opium produces on the native. He will steal, sell his property, his children, the mother of his children, and finally even commit murder for it. Would it not be the highest of blessings, if our humane and enlightened Government would stop these evils by a single dash of the pen, and save Assam, and all those who are about to emigrate into it as Tea cultivators, from the

dreadful results attendant on the habitual use of Opium? We should in the end be richly rewarded, by having a fine, healthy race of men growing up for our plantations, to fell our forests, to clear the land from jungle and wild beasts, and to plant and cultivate the luxury of the world. This can never be affected by the enfeebled Opium-eaters of Assam, who are more effeminate than women. I have dwelt thus long on the subject, thinking it one of great importance, as it will affect our future prospects in regard to Tea; also from a wish to benefit this people, and save those who are coming here, from catching the plague, by our using timely measures of prevention.

Monthly outlay of the present standing Establishment.

	Co.'s Rs.		
Superintendent,	500	0	0
1st Assistant to Do.	100	0	0
2d Do. Do.	70	0	0
1 Chinese Black-Tea maker,	55	11	6
1 Ditto Assistant to Ditto	11	1	6
1 Ditto Tea-box maker,	45	0	0
1 Ditto Interpreter,	45	0	0
1 Ditto Tea-box maker,	15	8	6
2 Ditto Green-Tea makers, at 15 : 8 : 6 each,	31	1	0
1 Ditto Tea-box maker,	33	4	6
1 Ditto Lead-canister maker,	22	3	0
24 Native Black-Tea makers, at 5 each,	120	0	0
12 Native Green-Tea makers, at 5 each,	60	0	0
1 Native Carpenter,	4	0	0
1 Coolie Sirdar,	10	0	0
4 Mahouts, at 6 each,	24	0	0
4 Ditto Mates, at 4 each,	16	0	0
Rice for 4 Elephants per month,	18	0	0
4 Sawyers, at 4 each,	16	0	0
2 Dâk runners, at 3 : 8 : 0 each,	7	0	0
4 Duffadars, at 3 each,	12	0	0
Fixed monthly expenditure in Assam,	1,215	14	0
Cash paid to Chinese families in China,	131	2	6
Total monthly expenditure,	1,347	0	6

or 16,000 a year, not including coolies and other items. It should be remembered that this establishment has been confined to a few tracts as

an experiment, and has never been fully worked. The Chinese Green-Tea makers, Canister-makers and Interpreter, have lately been added to the establishment; their services have not as yet been brought into account. We are just now availing ourselves of them by making Green Tea; and as the natives at present placed under them become available, large quantities of excellent Green-Tea will be manufactured. I suppose two Chinamen might qualify twenty-four natives for the first process; the second, as I have already recommended, might be performed in England, which in my humble opinion would effect a great saving, by getting machinery to do the greater part of the work. At all events, it never could be manufactured in Assam without a great expense, and this for want of labourers. However, it is gratifying to see how fast the Chinese acquire the Assamese language; for, after they have been a year in the country, they begin to speak sufficiently well for all ordinary purposes, so that an interpreter can very well be dispensed with. Our Chinamen can speak the Assamese language much better than the interpreter can the English language. They are a violent, headstrong, and passionate people, more especially as they are aware we are so much in their power. If the many behave as do the few, a Thannah would be necessary to keep them cool.

With respect to what are called the *Singpho* Tea tracts, I am sorry to say we have not been able this year to get a leaf from them, on account of the disturbances that have lately occurred there; nor do I believe we shall get any next year, unless we establish a post at *Ningrew*, which I think is the only effectual way to keep the country quiet, and secure our Tea. The Tea from these tracts is said by the Chinamen to be very fine. Some of the tracts are very extensive, and many may run for miles into the jungles for what we know; the whole of the country is capable of being turned into a vast Tea garden, the soil being excellent, and well adapted for the growth of Tea. On both sides of the Buri-Dehing river the Tea grows indigenous; it may be traced from tract to tract to *Hookum*, thus forming a chain of Tea tracts from the Irrawaddy to the borders of China, east of Assam. Ever since my residence at Sudiya this has been confirmed year after year by many of my Kamtee, Singpho, and Dewaneah acquaintances, who have traversed this route. It is therefore important for us to look well to our Eastern frontier, on account of our capability to extend our Tea cultivation in that direction. England alone consumes 31,829,620 lbs. nearly four laks of maunds, annually. To supply so vast a quantity of Tea, it will be necessary to cultivate all the hills and valleys of Assam; and on this very account a post at *Ningrew* becomes doubly necessary. A few

years hence, it may be found expedient to advance this frontier post to the top of the *Patkai* hill, the boundary line of our eastern frontier. Any rupture with Burmah would add to our Tea trade, by taking from them *Hookum* and *Munkoom*, and having the Irrawaddy as our boundary line. These countries are nominally under the Burmese, as they pay a small annual tribute; but this can never be collected without sending an armed force. They are said to be thinly inhabited, the population being kept down by the constant broils and wars, which one petty place makes upon another for the sake of plunder. All the inhabitants drink Tea, but it is not manufactured in our way; few, it is said, cultivate the plant. I have for years been trying to get some seeds or plants from them, but have never succeeded, on account of the disturbed state in which they live. The leaves of their Tea plants have always been represented to me as being much smaller than ours.

Muttuck is a country that abounds in Tea, and it might be made one extensive, beautiful Tea garden. We have many cultivated experimental tracts in it; we know of numerous extensive uncultivated tracts, and it appears to me that we are only in the infancy of our discoveries as yet. Our Tea, however, is insecure here. It was but a month or two ago that so great an alarm was created, that my people had to retire from our Tea gardens and manufacture at Deenjoy and Chubwa, which will account for the deficiency of this year's crop. Things must continue in this state until the government of the country is finally settled; for we are at present obliged, in order to follow a peaceful occupation, to have the means of defending ourselves from a sudden attack, ever since the unfortunate affairs at Sudiya. Before the transfer of the Tea tracts in this country can be made, it will be necessary, in justice to all parties, to know if *Muttuck* is, or is to become, ours or not. The natives at present are permitted to cultivate as much land as they please, on paying a poll-tax of two rupees per year; so that if the country is not ours, every man employed on the Tea will be subject to be called on for two rupees per annum, to be paid to the old Bura Senaputy's son, as governor of the country. This point is of vital importance to our Tea prospects up here. Many individuals might be induced to take Tea grounds, were they sure, that the soil was ours, and that they would be protected and permitted to cultivate it in security.

In looking forward to the unbounded benefit the discovery of this plant will produce to England, to India,—to Millions, I cannot but thank God for so great a blessing to our country. When I first discovered it, some 14 years ago, I little thought that I should have been spared long enough to see it become likely eventually to rival that of China

and that I should have to take a prominent part in bringing it to so successful an issue. Should what I have written on this new and interesting subject be of any benefit to the country, and the community at large, and help a little to impel the Tea forward to enrich our own dominions, and pull down the haughty pride of China, I shall feel myself richly repaid for all the perils and dangers and fatigues, that I have undergone in the cause of British India Tea.—*Journal of the Asiatic Society of Bengal, No.* 90.—*June* 1839.

Jaipore, 10*th June*, 1839.

Literary and Scientific Intelligence.

Adverting to the merited eulogium passed by Mr. Jerdon at page 63 of this Number, on B. H. Hodgson, Esq. British Resident at the Court of Nipal, we regret to find from the former gentleman that difficulties lie in the way of the publication of the projected work on the Zoology of Nipal, as may be gathered from the following passage of a letter received by Mr. Jerdon from Sir Wm. Jardine:—" About 200 species of birds from Nipal are now in my possession, one half of which are new; but I am pledged not to describe any of them, except in a general and entire work; and, notwithstanding the large list of Indian Subscribers, we cannot get a bookseller to run the risk of publishing, on account, they say, of the difficulty of collecting the Indian money."

The publication will not, however, with such admirable materials in existence, be permitted ultimately to fail for want of pecuniary means, we are sure, but the delay is deeply to be regretted.

Oriental Translation Fund.—The committee of the Oriental Translation Fund being desirous of submitting to the Subscribers a general summary of their proceedings for the past year, believe they cannot do so more clearly than by giving the subjoined notice, extracted from the Report of the Royal Asiatic Society, delivered at the anniversary meeting of that Society on the 11th of May, the materials for which notice were furnished to the Council by the Secretary of the Committee, as has been customary for several years past. And to these Reports the Committee take the present opportunity of referring the Subscribers of the Fund, as exhibiting succinct, and they trust satisfactory statements of the operations in which they have been engaged in carrying into effect the designs of the institution confided to their management.

Extract.—" In adverting to the condition of the Oriental Translation Fund,—an institution, the success of which must be a matter of interest to every Member of the Royal Asiatic Society, the Council are happy to state that it continues to enjoy the support of a large number of the patrons of Oriental literature, both at home and abroad ; and that its operations are carried on with a zeal and activity fully commensurate to its means. The most recent of its publications are two valuable Sanscrit works, with Latin translations, one translated by Dr. Stenzler, and entitled the 'Kumára Sambhava,' being an ancient Sanscrit poem attributed to Kalidása, who flourished a century before the Christian era ; the other entitled the 'Rig Veda Sanhita,' a collection of sacred hymns from the Vedas, translated and edited by the lamented Dr. Rosen. To his translation the editor designed to add extensive critical annotations, but only a few sheets of them were finished at the time of his decease. The work is consequently deprived of the valuable additions contemplated by the learned Doctor ; but, as it is, it remains a monument of his great philological acquirements, and of his laborious ardour in the study of this highly polished and classical language of India. The disappointment of the expectations of the Committee occasioned by this melancholy event will however be obviated by the kindness of Professor Wilson, who has undertaken to prepare a translation of the entire work into English, with notes illustrative of the peculiarities of the language of the original text, and of the religious system of the Vedas.

" The loss sustained both by the Royal Asiatic Society, and the Oriental Translation Committee, in the decease of Dr. Rosen will long be deplored, and his merits as a man and a scholar long remembered. The Committee recorded upon their minutes, and communicated to his father, the expression of their deep regret ; and many Members, both of the Society and the Committee, readily subscribed a sufficient sum to erect a marble monument over his grave, as a small but due tribute to his memory.

" Another volume of the Arabic Bibliographical Dictionary, edited and translated into Latin by Professor Flügel, will appear in a few weeks ; as will also the first volume of M. Garcin de Tassy's 'Histoire de la Littérature Hindoui et Hindoustani,' containing notices of many hundred Eastern authors and their writings, evidencing much acute and laborious research. Besides these, the printing of Mr. W. F. Thompson's translation of the Akhlák-i-Jalály, from the Persian of Fakír Jány Muhammad Asäad, is completed. Mr. Thompson has entitled his work 'Practical Philosophy of the Muhammadan People, exhibited in its professed connexion with the European, so as to render either an intro-

duction to the other;' and to it are appended numerous explanatory notes and references. This translation cannot fail to be highly appreciated by all who take an interest in metaphysical and ethical studies.

" Among the works in the course of printing by the Fund may be mentioned the 'Vishnu Purana,' translated by our Director, a member of the Oriental Translation Committee, whose well known attainments in Sanscrit are a sufficient guarantee for saying that the task could not have fallen into hands more competent to do justice to this curious mythological work of the Hindus.

" The History of Mohammedan Dynasties in Spain, translated from the Arabic of Ahmed Ibn Muhammad Al-makári, by Señor P. de Gayangoz, is also in the press.

" A complete history of the Muhammedan empire in Spain has long been a desideratum in our historical literature, which will now be supplied. The work under notice comprises a narrative of events during a period of nine centuries, that is, from the time of the invasion of Spain in 710 of our era, to the final expulsion of the Moriscoes in 1610, and contains ample details of the manners, customs, and literature of the Western Arabs.

" Of the works in the course of preparation for the press we may notice an interesting History of the Ghaznavides, and of the Conquests of Sultán Mahmúd of Ghazna, translated by the Rev. James Reynolds, from the Arabic work called 'Kitáb-al-Yamíní, by Abú Nasár Muhammad Ibn Al-Jabbár Al-Utbí;' also a translation by Professor Julien, of the 'Li-ki,' a celebrated and standard Chinese work on morals.

" The Committee have recently received a proposal from Baron Mac Guckin de Slane, of Paris, to translate into English Ibn Khallikan's Lives of Illustrious Men of Islámism, the text of which has recently appeared under the editorship of the Baron.—Dr. Sprenger has proposed a translation of Ali-Souithi's History of the Khalifs. The list of manuscripts announced for translation under the auspices of the Committee contains many other desirable works.

" The Council are also aware that the Committee have received several other proposals from eminent scholars of translations of valuable works, which they are precluded from accepting only because of their being already engaged in printing to the full amount of the funds at their disposal. It deserves remark that the list of books published by the Committee now comprises fifty-three works, most of which, it is probable could never have been presented to the public but for the institution of this Fund."

Royal Asiatic Society's House,
14, *Grafton Street, Bond Street,*
24th May, 1839.

VIII.—*Horary Meteorological Observations made agreeably with the suggestions of Sir* John Herschel.

1st.—*At the Madras Observatory.—By* T. G. Taylor, Esq. *H. E. I. C. Astronomer.*

Date.	Time.	Barometer.	Thermometer	Wet bulb.	Direction of wind.	Strength of wind	Remarks.
June 21	6 A. M.	29,756	81,3	76,0	s w	0	Breeze clear.
	7	29,772	83,0	78,0	s w	0	Calm do.
	8	29,804	85,5	78,5	s w	0	Gentle wind do.
	9	29,817	87,7	78,2	s w	0	Do. do. do.
	10	29,816	90,0	78,0	w	0	Do. do. do.
	11	29,800	89,7	79,7	s	1	Do. do. do.
	12	29,772	89,9	80,2	E. S E	2	Moderate wind do.
	1 P. M.	29,752	89,5	80,2	E	2	Strong wind do.
	2	29,728	89,5	80,4	S E	2	Do. do. do.
	3	29,707	88,6	80,7	E. S E	3	Do. do. do.
	4	29,702	88,4	80,5	E. S E	3	Do. do. do.
	5	29,700	86,8	79,0	E. S E	4	Do. do. do.
	6	29,718	85,0	80,3	S E	2	Do. do. do.
	7	29,726	84,6	80,1	S E	3	Do. do. do.
	8	29,741	83,8	80,8	E. S E	3	Do. do. do.
	9	29,766	83,5	80,7	S E	2	Moderate wind—quite clear, and lightning to the west.
	10	29,794	83,6	81,6	s	2	Do. do. haze do. do.
	11	29,790	84,0	82,0	s. s E	2	Do. do. fl.cl. do. to the N.
	12	29,796	84,0	81,5	s w. by w	1,2	Gentle wind, cloudy, vivid lightning to the NW&SW.
	1 A. M.	29,794	84,0	81,5	s w. by w	1,2	Gentle wind, drizzling, vivid lightning to the NW.
	2	29,790	83,8	80,5	s w	1,2	Gentle wind, cloudy, vivid lightning and thunder to the NW.
	3	29,762	83,0	80,0	s w. by s	3	Strong wind, clear, vivid lightning to the west.
	4	29,762	82,8	79,0	s w. by s	5	Very do. do. do. do. do. do.
	5	29,762	82,6	78,7	s w. by s	5	Do. do. do. fl. cl. do. do. to the NW.
	6	29,784	81,5	77,2	s	1	Moderate wind and thick haze
	7	29,810	83,3	78,1	s. s w	1	Do. do. do do.
	8	29,832	85,2	78,1	s w	1	Do. do. clouds in the N. horizon.
	9	29,834	87,4	79,4	s w	1	Gentle wind, flying clouds.
	10	29,828	88,4	79,4	s w	1	Gentle breeze, haze.
	11	29,812	89,0	81,7	S E	1	Do. do.
	12	29,802	88,7	81,7	S E	2	Moderate wind do.
	1 P. M.	29,780	89,0	81,8	S E	2	Do. do. do.
	2	29,760	88,4	81,0	s. s E	3	Strong do. thick haze.
	3	29,738	87,4	81,0	s. s E	3	Do. do. do. do.
	4	29,724	87,2	81,5	s. s E	3	Do. do. do. do.
	5	29,730	85,9	80,0	s. s E	3	Do. do. do. do.
	6	29,744	84,0	81,0	s	3	Do. do. do. do.

2.—*Horary Meteorological Observations made at the Summer Solstice* 1839, *at the Trevandrum Observatory.—By* G. SPERSCHNEIDER, *Superintendent.*

Date.	Hour.	Newman's Standard bar. corrected for 32° and for capillarity.	Standard thermometer.	Depress. of wet bulb thermometer.	Temp. of dew point.	Direction of wind.	Velocity of the wind.	Solar radiation.	Clouds, aspect of the sky and remarks.
June 21	6 A.M.	29.608	74.5	2.4	71.00	N W by W	5	—	Drizzling—gentle wind.
	7	.621	75.2	2.5	71.58	N W	1	2.5	Zen. clear cum stratus about hor. wind just perceptible.
	8	.629	77.8	4.1	71.91	do	2	4.0	Cloudy do.
	9	.635	79.3	4.5	72.91	do	3	1.7	do. gentle wind.
	10	.624	82.2	6.3	73.32	do	4	2.0	do. do.
	11	.598	83.6	7.7	72.71	do	3	7.8	Flying clds. in the zen. cum. about horizon—do.
	Noon.	.555	86.0	9.6	72.45	do	4	5.9	Zenith clear do. do.
	1 P.M.	.534	86.9	9.6	73.47	do	5	8 5	do. do. pleasant wind.
	2	.504	88.5	10.6	73.71	do	4	3 3	Sky rather clear do.
	3	.506	87.3	11.1	71.54	do	6	5.5	Light clouds rising up do.
	4	.513	85.6	10·0	71.34	N W by W	6	0.5	Flying clouds in the zen. dô.
	5	.519	84 6	9.3	71.31	N W	1	2.1	Sky getting clear light air.
	6	.541	82.9	7.4	72.40	do	2	No observation.	do. do.
	7	.573	81.4	5.8	73.21	do	1		Sky very clear do.
	8	.595	80.5	4.6	74.04	N W by N	1		do. do.
	9	.615	79.5	4.6	72.97	do	1		Light clouds in the zen. do.
	10	.621	78.0	4.7	71.20	do	,,		do. halo round the moon—calm.
	11	.592	76.9	3.7	71.56	N by W	1		Sky clear—wind hardly perceptible.
	Mid.	.583	76.2	3.1	71.72	do	1		do. do.
,, 22	1 A.M.	.560	76.3	3.3	71.53	do	,,		do. nearly calm.
	2	.542	76 2	2.9	72.03	do	,,		do. at 2h· 30m. drizzling—do.
	3	.534	76.1	2.7	72.22	N	4		do. gentle wind.
	4	.547	75.6	2.8	71.54	do	,,		do. calm.
	5	.549	75.0	2.7	71.07	N	2		do. wind just perceptible.
	6	.562	75.6	2.9	71.39	do	,,		do. haze about horizon—calm.
	7	.591	77.1	3.2	72.52	N	1	cly.	Hazy light air.
	8	.603	81.1	5.5	73.34	N W	2	do.	Cloudy do.
	9	624	83.7	6.1	75.24	N W by W	2	2.0	do. do.
	10	.638	83.5	6.8	74.35	N W	1	cly.	Very cloudy do.
	11	.632	84.6	7.5	74.14	W	1	5.5	do. do. at 11h. 48m. drizzling
	Noon.	·615	83.4	6.0	75.13	N N W	1		Overcast at 0h.30m. drizzling—lt. air.
	1 P.M.	.612	80.8	4.8	74.06	W	4	Heavy rain.	Heavy rain gentle wind.
	2	.602	77 8	3.3	73.11	do	4		do. continued do.
	3	.585	77.7	2.7	73.91	do	2		do. do. wind just perceptible.
	4	.581	75.5	2.9	71.31	do	1		do. do. nearly calm.
	5	.578	76.5	0.9	75.24	do	1		Drizzling do.
	6	29,605	77.3	2.2	74.20	do	1		Rain just ceased, still threatning, do.

June 21st fall of rain from	6 A. M. to 6 P. M.	None.
do.	6 P. M. to 6 A. M.	None.
June 22d do.	6 A. M. to 6 P. M.	2.5675
	Total	2.5675

The Instruments are the same—and situated exactly as before.

METEOROLOGICAL REGISTER KEPT AT THE MADRAS OBSERVATORY, FOR THE MONTH OF APRIL, 1839.

Days.	Barometer at 10 A. M.	Barometer at 4 P. M.	Barometer at 10 P. M.	Ther. at 10 A. M.	Ther. at 4 P. M.	Ther. at 10 P. M.	Wet Bulb. 10 A. M.	Wet Bulb. 4 P. M.	Wet Bulb. 10 P. M.	Rain. Sun-rise.	Rain. Sun-set.	Evaporation.	Direction of Wind. 10 A. M.	Direction of Wind. 4 P. M.	Direction of Wind. 10 P. M.	Weather. 10 A. M.	Weather. 4 P. M.	Remarks. 10 P. M.
1839	Inch.	Inch.	Inch.	o	o	o	o	o	o									
Apl. 1	30,052	29,968	30,022	83,1	86,0	82,4	7,1	9,0	6,3	......	......	......	S E	S E	S E	Clear	Haze	Thick haze.
2	,100	,990	,099	83,6	86,0	82,3	6,4	7,2	4,8	......	......	......	S	S.S E	S E	Fl. cl.	Th. hz.	Clear.
3	,086	,996	,082	83,0	86,5	83,9	5,6	7,6	4,8	......	......	3.066	N E	S E	S E	Fl. cl.	Do.	Do.
4	,062	,946	,014	84,9	87,0	83,8	6,4	7,3	6,3	......	......	......	S	S E	S E	Haze	Do.	Do.
5	,008	,906	29,960	84,6	87,8	83,8	7,0	8,8	4,4	......	......	......	N W	S E. E	S E	Fl. cl.	Clear	Do. lightning.
6	29,988	,878	,930	85,2	87,8	84,0	9,6	9,3	7,4	......	......	......	S	S E. E	S E	Clear	Do.	Clear.
7	,968	—	,920	84,8	—	84,0	6,1	—	4,4	......	......	......	S	—	E	Fl. cl.	—	Do.
8	,944	,8 4	,924	85,0	88,0	82,1	6,4	8,5	3,6	......	......	......	N E	E	N E	Fl. cl.	Clear	Do.
9	,928	,862	,926	87,0	88,0	84,6	7,5	8,3	4,7	......	......	......	N E	N E	N	Fl. cl.	Fl. cl.	Fl. cl. lightning.
10	,922	,844	,920	85,6	86,0	85,8	4,9	4,5	3,2	......	......	3,051	N W	N E	S E	Fl. cl.	Clo.	Drizzling rain, loud thunder and vivid lightning throughout the night.
11	,948	,868	,944	84,5	85,8	84,0	4,5	4,5	3,4	0,577	......	......	S W	E	S E	Fl. cl.	Do.	Clear—lightning.
12	30,024	,920	,976	85,7	85,8	83,6	5,2	5,3	3,5	......	......	......	E	S E. E	Calm	Clo.	Do.	Fl. cl. do.
13	,018	,920	30,032	85,3	87,·	84,9	4,7	4,6	4,6	......	......	......	S W	S E	S, SE	Fl. cl.	Clear	Clear do.
14	,008	—	,018	85,8	—	84,5	9,5	—	4,2	......	......	......	S W	—	S E	Fl. cl.	—	Do. lightning.
15	,018	,904	29,970	86,0	88,0	84,8	5,5	5,0	3,9	......	......	......	S W	S. S E	S E	Haze	Clear	Do.
16	,088	,882	,934	87,7	89,6	84,3	7,8	7,6	2,7	......	......	......	S	S	S	Fl. cl.	Do.	Do lightning.
17	29,960	,858	,900	88,1	89,0	81,2	9,7	7,1	4,4	......	......	2,466	S	S.S E	S	Clear	Do.	Do. do.
18	,932	,850	,920	89,7	88,5	84,3	11,1	6,5	3,8	......	......	......	S W	S.S E	S	Do.	Do.	Do. do.
19	,948	,852	,940	88,1	88,5	85,3	6,2	5,6	3,ı	......	......	......	S E	SE. E	S	Do.	Do.	Fl. cl. do.
20	,968	,866	,960	86,5	88,0	84,3	6,7	5,1	5,0	......	......	......	S	S E	S E	Do.	Do.	Haze do.
21	30,002	—	,980	85,3	—	84,9	6,7	—	6,4	......	......	......	E	—	S	Do.	—	Cloudy—do. and thunder.
22	,000	—	,980	83,3	—	85,2	4,0	—	5,5	......	......	......	S W	—	E	Clo.	—	Do. lightning.
23	29,968	,876	,960	83,9	86,0	84,8	6,9	5,5	4,2	1,047	......	......	S E	S E	S	Do.	Fl. cl.	Fl. cl. thunder and lightning.
24	,934	,846	,922	85,7	86,5	84,4	5,9	6,0	3,8	......	......	2,808	S W	S E	S	Fl. cl.	Clo.	Clear do.
25	,924	,8·2	,902	85,3	89,0	85,0	7,0	8,0	4,1	......	......	......	S W	S. S E	S. S E	Clo.	Clear	Do. do.
26	,898	,816	,872	86.7	89,0	85,9	6,9	7,0	3.9	......	......	......	S W. W	S E	S	Fl. cl.	Do.	
27	,878	—	,868	87,7	—	86,8	7,5	—	—	......	......	......	S W	......	......	Fl. cl.	......	
28	—	—	,854	—	—	84,8	—	—	—	......	......	......	......	......	......	Clear	......	
29	—	—	,878	—	—	87,3	—	—	—	......	......	......	......					
30	—	—	,880	—	—	87,6	—	—	5,7	......	......	......	......					
Mean	29,984	29,888	29,950	85,6	87,0	84,6	6,8	6,7	4,5	......	......	......	......					

METEOROLOGICAL REGISTER KEPT AT THE MADRAS OBSERVATORY, FOR THE MONTH OF MAY, 1839.

Days.	Barometer at			Ther. at			Wet Bulb.			Rain.		Evaporation.	Direction of wind.			Weather.		Remarks.
	10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	10 P. M.	Sun-rise.	Sun-set.		10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	10 P. M.
1839	Inch.	Inch.	Inch.	o	o	o	o	o	o									
May 1	29,899	29,784	29,880	88,0	91,0	87,6	8,4	7,5	5,7	......	......	3,068	S E	S. S E	S	Clear	Clear	Haze vivid lightning.
2	,854	—	,794	88,9	—	87,6	10,4	—	3,9	......	......	......	S W	—	S	Clear	—	Do.—thunder—vivid do.
3	,848	,752	,781	88,2	94,5	84,5	9,3	12,0	1,6	......	......	......	S W	S W. W	S	Clear	Clear	Clear do.
4	,832	,750	,830	90,4	92,4	87,3	6,9	8,4	4,9	......	......	......	W	S. S E	S. S W	Clear	Clear	Flying clouds do.
5	,876	—	,876	90,7	—	88,2	10,4	—	6,3	......	......	......	S	—	S. S W	Clear	—	Cloudy vivid do.
6	,944	,824	,890	87,8	89,6	85,7	8,3	5,6	3,5	......	......	......	S W	S. S E	S	Cloudy	Clear	Flying clouds do.
7	,904	,774	,844	89,8	91,0	87,0	9,5	8,0	5,1	......	......	......	SW	S. S E	S	Clear	Cloudy	Clear—thunder and vivid lightning.
8	,868	,764	,834	90,7	94,6	88,6	13,8	11,9	6,1	......	......	3,932	SW. W	S. S E	S. S W	Clear	Clear	Do. do.
9	,890	,794	,874	91,7	94,5	88,8	16,1	11,5	6,8	......	......	......	W	S. S E	S. S W	Clear	Clear	Do. do.
10	,892	,800	,872	93,7	93,0	87,9	16,2	10,5	5,4	......	......	......	SW. W	S. S E	S. S W	Clear	Clear	Do. do.
11	,900	,810	,894	95,8	95,8	86,6	19,8	10,3	6,6	......	......	......	W	S. S E	S. S W	Clear	Clear	Do. do.
12	,926	—	,906	91,7	—	87,7	12,1	—	6,8	......	......	......	SW by W	—	S W	Clear	—	Do do.
13	,978	,856	,944	89,7	89,6	87,3	10,3	5,1	4,3	......	......	......	N	E	S	Cloudy	Cloudy	Flying clouds—vivid do.
14	,944	—	,878	88,3	—	86,0	8,7	—	5,9	......	......	......	S W	—	S W	Cloudy	—	Clear—thunder and do.
15	,902	—	,876	88,2	—	87,0	10,2	—	4,5	......	......	4,461	S W	—	S	Clear	—	Do. do.
16	,888	,794	,872	88,9	90,2	87,3	9,5	4,7	5,8	......	......	......	W	S E	S. S W	Haze	Fl. cl.	Flying clouds—thunder & lightning
17	,870	,768	,882	83,0	90,0	88,0	7,9	4,5	4,6	......	......	......	S W	S E	S. S W	Fl. cl.	Th. hz.	Do. do. do.
18	,862	,772	,828	87,8	89,6	86,8	8·0	5,1	4,8	......	......	......	S. S W	S. SE	S. S W	Haze	Cloudy	Do. do. do.
19	,874	—	,860	89,0	—	88,3	11,0	—	7,7	......	......	......	W	—	S	Haze	—	Do. do. do.
20	,830	,760	,832	89,0	90,6	87,6	10,5	6,1	4,5	......	......	......	W	E	S E	Haze	Fl. cl.	Cloudy do.
21	,860	,760	,828	89,5	97,0	88,7	13,1	17,5	7,3	......	......	......	W	W	S. S E	Haze	Cloudy	Do. do.
22	,860	,768	,852	91,8	90,0	88,3	15,3	8,2	7,4	......	......	3,754	S W	S. S E	S. S E	Clear	Cloudy	Flying clouds, thunder and lightning
23	,896	,780	,856	90,0	91,6	88,5	14,0	11,6	6,6	......	......	......	W	S E	S. S E	Haze	Fl. cl.	Cloudy do. do.
24	,874	,774	,858	90,5	90,6	86,8	17,1	9,6	4,1	......	......	......	W	S E	S E	Haze	Clear	Do. do.
25	,874	,774	,860	90,8	92,0	87,6	17,3	11,0	6,2	......	......	......	W	S E	S E	Haze	Clear	Do.
26	,856	—	,842	90,7	—	88,7	13,2	—	6,4	......	......	......	W	—	S. S E	Clear	—	Do. thunder and vivid lightning.
27	,886	,768	,828	86,6	87,8	86,2	8,1	4,8	4,3	0,664	......	......	N W	S E	S	Cloudy	Cloudy	Haze do. do.
28	,854	,752	,810	83,9	85,0	85,2	5,4	4,5	5,3	......	......	......	N E	S	S	Cloudy	Cloudy	Cloudy do.
29	,846	,774	,816	86,2	85,6	84,7	9,6	6,1	5,0	......	......	3,368	N W. W	SE. by E	S E	Haze	Cloudy	Do. thunder do.
30	,810	,730	,780	85,2	91,4	86,3	9,7	15.4	7,7	0,030	......	......	W	W	S W	Haze	Cloudy	Do. do.
31	,822	,712	,783	86,1	90,0	85,6	11,5	10,5	8,3	......	......	......	W	W	W	Cloudy	Cloudy	Do. do.
Mean	29,878	29,775	29,850	89,3	91,1	87,2	11,3	8,8	5,6									

METEOROLOGICAL REGISTER KEPT AT THE MADRAS OBSERVATORY, FOR THE MONTH OF JUNE, 1839.

Days.	Barometer at 10 A. M.	Barometer at 4 P. M.	Barometer at 10 P. M.	Ther. at 10 A. M.	Ther. at 4 P. M.	Ther. at 10 P. M.	Wet Bulb. 10 A. M.	Wet Bulb. 4 P. M.	Wet Bulb. 10 P. M.	Rain. Sun-rise.	Rain. Sun-set.	Evaporation.	Direction of Wind. 10 A. M.	Direction of Wind. 4 P. M.	Direction of Wind. 10 P. M.	Weather. 10 A. M.	Weather. 4 P. M.	Remarks. 10 P. M.
1839	Inch.	Inch.	Inch.	o	o	o	o	o	o									
June 1	29,818	29,732	29,784	87,8	91,0	86,1	12,3	11,5	5,2	......	......	......	W	W	SW	Cloudy	Cloudy	Cloudy—thunder and lightning.
2	,836	—	,816	86,5	—	86,7	11,5	—	8,6	0,130	......	......	W	—	SW	Cloudy	—	Cloudy—lightning.
3	,842	,730	,750	86,3	91,0	85,5	11,4	12,5	7,6	......	......	......	W	W	S. SW	Cloudy	Cloudy	Haze, strong wind, at night lightning.
4	,778	,680	,736	87,1	94,2	90,3	11,5	19,2	14,7	......	......	......	W. SW	W	W.SW	Haze	Cloudy	Haze, very strong wind, at night light.
5	,784	,692	,746	89,5	94,6	89,3	11,9	13,1	11,8	......	......	4,035	W. SW	W	W. NW	Haze	Haze	Haze, strong wind, at night lightning.
6	,786	,668	,766	89,3	94,8	90,3	12,7	16,3	9,0	......	......	......	W	W	S	Haze	Cloudy	Cloudy—lightning.
7	,814	,712	,816	90,3	98,0	89,8	14,0	21,0	8,4	......	......	......	W	W	S	Clear	Cloudy	Cloudy—thunder and lightning.
8	,816	,746	—	89,9	95,0	—	13,5	11,5	—	......	......	......	W	E	—	Cloudy	Cloudy	—— thunder and lightning.
9	,872	,762	—	89,6	90,0	—	12,1	8,5	—	0,217	......	......	W	SE	—	Clear	Cloudy	—— thunder and vivid lightning.
10	,874	,768	—	86,5	92,2	—	6,5	8,3	—	1,831	......	......	SW	S. SE	—	Cloudy	Cloudy	—— thunder and lightning.
11	,910	,782	—	86,9	89,6	—	9,9	9,7	—	0,047	0,027	......	W	S. SE	—	Haze	Fl. cl.	—— thunder and lightning.
12	,910	,794	29,860	86,7	90,4	87,2	10,2	10,4	6,8	0,027	......	4,233	W	E	S	Haze	Haze	Flying clouds—lightning.
13	,850	,744	,834	88,0	91,0	88,0	11,9	8,3	5,5	......	......	......	W	SE	S.S W	Clear	Haze	Clear.
14	,866	,778	,882	88,7	90,2	87,8	10,3	8,2	5,5	......	......	......	W	SE	S. SW	Clear	Fl. cl.	Cloudy—vivid lightning and thunder.
15	,918	,810	,914	87,7	89,8	87,5	7,9	6,9	6,9	......	0,177	......	SW	SE	SW	Cloudy	Cloudy	Cloudy—thunder and lightning.
16	,920	—	,900	86,3	—	87,5	7,5	—	6,7	......	......	......	W	—	W.S W	Fl. cl.	—	Flying clouds—lightning.
17	,896	,810	,852	88,6	89,8	85,9	12,3	11,3	5,4	......	......	......	W	E	S	Haze	Haze	Haze—lightning.
18	,855	,784	,852	89,2	90,6	87,8	13,2	12,1	7,1	......	......	......	W	S E. E	S	Haze	Haze	Haze—lightning.
19	,856	,762	—	89,1	90,6	—	11,3	8,6	—	......	......	3,475	W	S E. E	—	Th. hz.	Clear	Haze—lightning.
20	,852	,742	,816	89,5	90,0	87,7	11,1	7,6	8,6	......	......	......	W	S S.E	SW	Clear	Clear	Clear—lightning and thunder.
21	,816	,702	,794	90,0	88,4	83,6	12,0	7,9	2,0	......	......	......	W	E, SE	S	Clear	Clear	Haze—vivid lightning
22	,828	,724	,828	88,4	87,2	85,6	9,0	5,7	4,0	......	......	......	SW	S. SE	S. SW	Haze	Th. hz.	Haze—lightning.
23	,838	—	,830	87,8	—	86,3	8,3	—	3,7	......	......	......	SW	—	SE	Haze	—	Clear—lightning.
24	,842	,724	,844	87,9	89,0	86,0	5,6	6,5	4,4	......	......	......	SE	SE	S	Clear	Haze	Cloudy—lightning.
25	,850	,750	,834	88,1	88,5	85,9	5,9	6,0	5,4	......	......	......	E	E. SE	SE	Cloudy	Cloudy	Haze, thunder at day time; lightning at
26	,822	,730	,808	86,8	89,6	85.9	8,4	7,7	4,9	......	......	3,238	SW	E. SE	SE	Haze	Th. hz.	Cloudy—vivid lightning. [night.
27	,800	,720	,800	88,0	89,2	86,3	9,0	8,2	4,4	......	......	......	NW	E. S E	SW	Clear	Fl. cl.	Flying clouds—lightning.
28	,800	,724	,822	90,0	89,4	83,7	11,0	7,1	7,8	......	......	......	SW	E. S E	W	Fl. cl.	Cloudy	Cloudy, vivid lightning, thunder, rain.
29	,814	,738	,812	87,0	92,2	85,3	8,5	13,8	8,8	......	......	......	SW	W	SW	Th. hz.	Cloudy	Cloudy—lightning,
30	,834	—	,824	85,8	—	83,2	10,4	—	2,8	......	0,127	......	SW	—	SW	Haze	—	Flying clouds.
Mean	29,843	29,743	29,821	88,1	91,0	86,8	10,4	10,3	6,6									

The Instruments with which the foregoing observations are made, are placed in the Western Verandah of the Honourable Company's Observatory; at about 5 feet above the surface of the ground, and 27 feet above the level of the Sea; the thermometer was made on purpose for the Observatory, and at 75° (the only point at which a comparison has been made) it was found to differ insensibly from the Royal Society's Standard; the barometer is one of two Standards which I have lately constructed, and may be depended upon to 0,0100 an inch.

T. G. Taylor,
H. C. Astronomer.